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THE PENNSYLVANIA BEEKEEPER

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The minutes of the winter meting in January have not been turned over to the publishing committee, possibly they will be available for a later issue. Most of the papers read at the meeting, however, have been received and they are included in this issue of the Pennsylvania Beekeeper. The financial report of the secretary-treasurer is given below. This report has not as yet been acted upon by the auditing committee.

STATEMENT

Troy, Pennsylvania,
January 19, 1933.

Charles N. Greene, Secretary-Treasurer,
Pennsylvania State Beekeepers Association,

In account with The Pennsylvania State Beekeepers Association

Dr.			Cr.	
Jan. 19, 1932			Ck. American B. Journal .....$	50
Cash on hand:			R. H. Van Keuren, cards	4 50
P. A. F. Savings ac. .....$	63 39		do Pub. Committee	39 17
U. S. Bonds	1 672 36		A. I. Root Co., Glean'gs	7 10
Bonds appreciation	327 64		Dadants, A. B. J.	2 50
Checking acc't	34 10		Secy-Treas acc't	26 22
Increase P. A. F.-32	27 16		Permanent Ac. Fund	27 16
Interest:			St. Louis Button Co.	5 00
First Nat. Bk. 2.42			R. H. Van Keuren, P. Com.	56 50
U. S. Bonds 62.50	64 92		U. S. Bonds	2 000 00
Dues, members	118 00		Savings account	92 97
Landis—(2 yr. Sub.)	10		Checking account	13 65
Subscriptions	10 10		Interest Coupons, U. S. Bonds	62 50
Publishing Committee	20 00			
	$2 337 77			$2 337 77

Statement of Penna Beekeeper Account by H. W. Beaver

Received from Ads:		Paid out:	
J. B. Hollopeter, 1-2 page	$ 13 00	2500 envelopes and printing same	$ 17 50
W. G. Lauver, 1 page	25 00	Printing April Number	72 00
Jasper Knight, 1-2 page	13 00	Postage—including letter postage	7 10
Morley Petit, 1-2 page	13 00		
H. A. Silvas, 1-8 page, 2 issues	13 00	Printing July Number	54 75
Walter S. Schell, 1-2 page	13 00	Postage	6 74
Allen Latham, 1-8 page	4 00	Printing October Number	57 50
Floyd Sandt, 1-8 page	4 00	Postage	6 76
The A. I. Root Co. of Phila., 1-4 page	7 00	Printing January Number	48 00
I. W. Scott Co., 1-4 page	7 00	Postage	7 15
Stewart Hdw. Co., 1-8 page	4 00		$ 277 50
The A. I. Root Co., 1 page	25 00		
W. T. Falconer Co., 1-4 page	7 00	To be paid out of Association Funds	105 50
Earl E. Manges, 1-8 page	4 00		
Fred W. Muth Co., 1 page	25 00		
The Stover Apiaries, 1-4 page	7 00	Paid by advertising	172 00
Ronald Kirk, 1-4 page	7 00	Balance paid to C. N. Greene	20 00
Cal Bee Tool Co., 1-4 page, two issues	4 00		
E. F. Reustle, 1-8 page	4 00		
Reynoldsville Hdw. Co., 1-8 page	4 00		
	$192 00		$ 192 00

NOTICE—This issue will go to our full list, but if those who have not paid their dues for 1933 desire to receive the Pennsylvania Beekeeper regularly hereafter, will please send their dollar for dues to the Secretary, Mr. C. N. Greene, Troy, Pa., for membership in the Pennsylvania Beekeepers Association for one year, and entitles you to receive the Penna. Beekeeper.

APIARY INSPECTION IN PENNSYLVANIA

By H. B. Kirk

Our area clean-up plan of apiary inspection has now been operating five years. The plan has proven successful and is now being used by most states where a sufficient number of field inspectors can be employed to carry out the work successfully.

This state is very fortunate in having proper inspection laws and officials who see the importance of enforcing them, and also the support of all bee organizations and commercial beekeepers. Our funds, while not sufficient to cover the state as often as might be considered necessary, have enabled us to make considerably inroads on disease in many sections. European foul brood and sac brood have been reduced to a negligible quantity. Illegal hives, while not entirely eliminated, will in a few years also be of little importance and the time spent on these three items can be used to good advantage in controlling our most troublesome disease—American foul brood.

European foul brood and sac brood not many years ago caused serious losses in certain locations but the average percentage found the past two years has been one-half of one per cent. The percentage of American foul brood on the other hand has ranged from 3.4 p. c. to 16 p. c. the past eight years and last year was 7.8 p. c. To protect the beekeeper sufficiently it will be necessary to reduce this percentage considerably. The careful work done by the inspectors the past five years and the amount of burning done the past two years have without doubt reduced disease a great deal. The care taken by the beekeeper in treating colonies is also an important factor in controlling diseases. Our fall

follow-up inspection this past year showed that the 7.8 p. c. infection referred to above was reduced to less than one per cent by the close of the season. Apiaries in which American foul brood is found but not burned by the inspector are given a second follow-up inspection the succeeding spring and all diseased colonies eliminated.

As the state has now been covered by a fairly systematic inspection of which careful records have been kept, the subsequent year's inspection will show the exact percentage of control in a given area. As our control methods are practically the same now as at the beginning of our area inspection work, our chief problem is to make our present system as efficient as possible. The greatest amount of time lost the past few seasons has been due to the difference in time it takes to inspect an up-to-date apiary and one which is not equipped or arranged properly. An up-to-date apiary is one in which the combs in the hives have been built on full sheets of foundation, carefully wired, where the colonies are placed close to the ground and may be easily handled and where the beekeeper is willing to assist the inspector in making any correction necessary at the time of inspection without having to make a second trip to check on the efficiency of the work done by the beekeeper himself. When disease is present in an apiary the beekeeper should permit and assist the inspector in either destroying the colony, if necessary, or in shaking or treating colonies slightly infected. When illegal hives are found the beekeeper should assist the inspector in destroying them if the inspector advises it or transfer them in such manner that the combs will be perfectly straight and easily removable. Many colonies transferred by the beekeeper are found on second inspection entirely unsatisfactory for proper inspection and likewise unsatisfactory for proper handling of the frames by the beekeeper himself.

The actual difference in time in inspecting an apiary with modern hives arranged in a convenient location and one that is not properly equipped or arranged may vary from five to thirty minutes. The writer has inspected apiaries of all description and in inspection up-to-date apiaries which are composed of modern equipment, 1,000 colonies should be inspected by an inspector in a week's time, whereas an average of 300-400 colonies per week has been inspected the past five years. This extra time is taken in inspecting poor equipment, treating and burning diseased colonies and instructing the beekeeper in the proper methods of caring for his bees.

While the inspector made an excellent record the past season in inspecting 53,000 colonies of bees and burning 4,130 colonies, a still greater number could be inspected if the following rules would be followed by the beekeeper:

1. Have your apiary arranged in such a manner and the colonies in such shape that they can be inspected easily and quickly.

2. If you have colonies affected with disease listen carefully to the instructions of the inspector and permit him to assist you in burning if he recommends it.

3. If you have colonies to transfer, do it by placing a modern hive equipped with frames of comb or foundation properly wired over the old box or crossed comb hive and let the bees transfer themselves. Perfect combs will be the result.

4. Assist the inspector in locating beekeepers not on our inspection list.

If the above rules are followed, more efficient service can be rendered the beekeeper and American foul brood can be reduced to such an extent that only an occasional colony will have to be treated or destroyed.

APIARY INSPECTION BY COUNTIES IN 1932

By Harry B. Kirk

	Apiaries Insp.	Ap. with A. F. B.	No. of Colonies	Cols. Insp.	Col. A. F. B.	Col. E. F. B.	Col. Sac B.	C. C. Col.	Box Hives	Col. Burned
Adams	2	1	37	37	3					
Allegheny	435	66	1655	1598	205	2		107	61	228
Armstrong	231	64	1151	1150	119	1		88	31	116
Beaver	2	1	24	24	16					
Berks	386	14	2297	2269	27	5	8	283	187	110
Blair	63	5	380	352	7					5
Bradford	5	2	41	41	2					1
Bucks	59	8	410	319	23			16	11	13
Butler	601	199	2471	2471	546			191	136	337
Clearfield	344	111	2628	2628	365	14	21	228	126	212
Columbia	462	155	2899	2684	495	9	2	381	136	176
Crawford	53	19	349	339	47			25	5	47
Cumberland	13	1	255	149	2				20	22
Dauphin	34	11	245	245	34			20	7	33
Delaware	27	5	211	158	13			10	1	38
Elk	163	25	830	830	94			22	23	87
Erie	240	51	1278	1278	97	19		101	21	69
Forest	99	22	682	682	186	2		35	11	188
Franklin	106	4	736	735	18			74	141	79
Fulton	294		1395	1395			1	562	349	
Greene	474	19	3245	3138	13			238	117	16
Indiana	699	222	4506	4506	666	13	21	351	146	596
Jefferson	18	5	458	445	11			2		7
Juniata	121	1	1000	990	4		1	131	106	4
Lancaster	15		57	57				5	9	14
Lawrence	501	191	2286	2259	503			105	69	219
Lehigh	16	10	343	342	48	5	1	58	4	35
Luzerne	298	127	2960	2711	516	6	9	54	121	502
Lycoming	13	7	185	165	55			5		6
Mercer	206	53	1313	1313	258	2		95	20	160
Mifflin	24	1	172	172	2		1	2	7	3
Monroe	236	38	2385	2381	189	10	10	158	76	138
Montgomery	42	5	208	146	18	1		12	11	17
Montour	71	8	299	299	29		2	6	8	2
Northamton	213	47	1845	1844	249	1		134	20	174
Nrthum'land	202	11	1162	1132	13	1		98	79	4
Perry	115		559	559			10	39	83	53
Philadelphia	7	1	11	7	3					3
Pike	11		66	66				1	6	
Schuylkill	2		9	9					4	
Snyder	113	1	566	439	2	3	3	104	7	46
Somerset	700	72	5337	5298	210	11	23	520	678	166
Union	35		153	101				16	4	7
Warren	45	1	214	214	1	6		12	1	2
Washington	10	2	92	92	26			6	1	26
Wayne	62	7	575	555	19			34	30	9
Wstmorland	376	58	3369	3369	98	1	5	216	330	88
York	242	10	1555	1555	18	4	10	260	58	72
TOTALS	8486	1661	54904	53548	5250	116	128	4805	3261	4130

PREPARATION OF EXTRACTED HONEY FOR MARKET

By Dr. E. F. Phillips, Ithaca, N. Y.

In the marketing of honey, one of the first considerations is to have the honey as good as possible. It is obvious to any person familiar with the honey sold on many of our markets that a large proportion of this honey is unsuited for table use, either because of its flavor or because in some way the quality has been impaired by something that the beekeeper has done. Our first step in improving the honey market is then to eliminate this poor honey from the competition of better honey.

Since the beekeeper cannot control what his bees gather, and since so often the bees bring into the hive honey of poor flavor, the solution of the problem of quality lies chiefly in blending honeys. If a beekeeper wishes to sell his honey locally, and if this honey happens to be off grade, he can remedy the situation by blending it with higher quality honey. Under conditions of the present honey market, honey of superb quality may be purchased at low prices, so that there seems little excuse for a beekeeper to sell poor honey to his local trade, thus injuring that trade for future sales.

The heating of honey has become a rather common practice. When honey is put into bottles, the bottler desires that it shall remain liquid for as long a time as possible, since partially granulated honey in a glass container is unsightly. Methods have been well developed for handling honey in bottling by heating it to about 160 degrees F., filling the bottles while hot and then sealing hermetically at once. Bottles thus filled retain the honey in liquid state for a considerable time.

When honey is heated prior to putting it into tin containers, certain troubles arise. No ordinary tin container is hermtically sealed, and as a result there is a far greater tendency for the honey to granulate quickly. Since the container is opaque, it is hard to tell when granulation at the bottom of the package has occurred. This would not be so serious were it not for the fact that after heating, granulation always occurs so as to form large, coarse, gritty crystals, and when this occurs the honey is made unfit for table use. The flavor is much injured, since honey flavors depend as much on the physical state of the honey as on the flavoring materials which the honey contains. It is almost safe to say that honey which is to be sold in tin or other opaque containers must not be heated before packing.

Fermentation of honey has come to be a serious problem to many beekeepers. When honey was sold in a short time after extracting, fermentation was rarely seen, and there grew up a belief that fermentation was due wholly to the extracting of unripe honey. This we know not to be true, for as the beekeeping industry developed and honeys were held for a longer period before sale, fermentation was found greatly to increase. Almost without exception, fermentation occurs only in granulated honey. and the harder the granulation, the greater the probability of fermentation. The yeasts causing honey fermentation are present in all honeys, and when through granulation conditions favorable for the growth of these yeasts occur, the honey soon spoils. It was somewhat to overcome this tendency that heating of honey came into common practice.

Since coarse granulation follows heating, and since heating is necessary to avoid fermentation, the beekeeper finds himself in a peculiar circumstance. It was to avoid this dilemma that Dr. E. J. Dyce undertook a study of the control of fermentation and granulation. The process developed as a result of this work involves heating the honey to 160 degrees F., rapid cooling to avoid injury to the flavor, the insertion of seed crystals from previously processed honey and the retention of the honey during the process of further granulation at an exact temperature of 57 degrees F. The details of the method are discussed in bulletin 528 of the Cornell University Agricultural Experiment Station, and a copy of his bulletin may be obtained on request. There are of course a number of minor points to be observed in the use of this process about which space here does not justify discussion, but special emphasis must be placed on the fact that an absolutely exact temperature is required if the granulation is to be smooth and fine, and if the flavor is to be improved as this process improves it. Because of this limitation which is placed on the use of honey by the nature of honey itself, Doctor Dyce has

thought it desirable to apply for a patent on this process. He has presented the patent, if and when issued, to Cornell University, so that the University can restrict issuance of licenses for the use of the process to persons or firms having facilities for the putting out of a good quality honey. Since, as stated earlier, there is such a vast amount of inferior honey on the market, the University would not feel justified in adding to the poor quality honey, and it is believed that the best use that may be made of this discovery is to limit its use to quality goods.

PRODUCING HIGH GRADE HONEY

By Edwin J. Anderson, State College, Pa.

Our beekeepers are continuously confronted with ever increasing competion from honey shipped into the State from outside sources. A large part of this honey comes from so-called commercial producing areas where the production per colony is considerably above that of the average for Pennsylvania. This honey is generally put up in a most attractive manner in fancy bottles and cellophane wrapped sections, and is a honey with a good flavor.

In order to meet this competion our beekeepers must develop their beekeeping so as to remove all unnecessary expense and waste. They must keep down as low as possible the cost of production and make each hive or unit of expense give a maximum return for the investment.

There are a number of manipulations which if carried out by the beekeeper will help to increase the quality of honey produced. In order to produce fancy section honey each colony must be strong, fairly boiling over with bees when the honey flow begins. This is true especially during a slow honey flow when a colony of average strength produces few fancy sections.

The factors which help build a strong colony in spring are as follows:

1. Plenty of food, 40 pounds for spring brood rearing.
2. Good young queens introduced last fall.
3. Good wind protection.
4. Packing in the colder sections of the State.
5. Plenty of space for egg laying by the queen.
6. An abundance of bees early.
7. All combs in the brood chamber free or relatively free from stretched cells and drone cells.
8. Freedom of the colonies from adult and brood diseases.

Most of these points are self explanatory. Spring feeding may be practiced when the colony shows signs of running short of food.

A more satisfactory method of handling the colony is to leave 40 pounds or more of honey in the hives in fall so as to make spring feeding unnecessary. Plenty of space for the queen is obtained by using two hive bodies or by giving the colony a shallow frame super early, so as to provide space in which to store honey from the early spring honey flow. One brood chamber is sufficient for the queen providing it contains only good worker combs and is not crowded with honey.

If for any reason a colony becomes weak or queenless, package bees may be given to it in early April. One pound or 5,000 young bees will do considerable to assist and stimulate a weak colony to build up rapidly in spring, so as to be strong for the honey flow in June. Likewise the colony may be given a young queen early in April should the old one show signs of failing.

During the honey flow section supers should not be added too rapidly. Well filled sections can be obtained only when the bees are crowded to a considerable extent. Empty section supers should be placed on top of the other section supers until the one next to the brood chamber is well filled with honey and one-third or one-half of the sections are sealed. The empty super should then be placed below the other supers and next to the brood chamber. Before any

sections are given to the bees they should be painted on top with melted paraffin. The paraffin will hold the right temperature if it is melted in a double boiler with hot water and steam below.

When the sections in a super are entirely filled remove the super from the bees above a bees escape. Each day that the sections remain on the hive the bees add propolis to both the wax and the wood and mar the appearance of the section. If the bees are smoked out of the sections they will often chew holes through the cappings or the smoke may leave a bad flavor in the honey and impair its quality.

No honey, however, should be removed from the hive until the three-fourths of the sections in the super are entirely sealed.

After the honey is removed it should be fumigated twice with carbon bisulphide to kill all wax moth. (Carbon bisulphide is explosive and should be kept away from any open flame. About one-third to one-half ounce of carbon bisulphide should be used for each super. The supers to be placed in a pile with carbon bisulphide in an empty pan in a super above the others. All cracks should be closed to prevent a rapid escape of the gas.

The sections should be wrapped in some type of cellophane wrapper and stored in a dry place until ready for market. A paper shipping case holding 24 sections makes an ideal storage place for honey until it is taken to market.

Honey should not be extracted until the combs are entirely sealed. Extracting is done more efficiently when the temperature of the honey and the honey house is above 75 degrees Fahrenheit.

The honey should be strained through cheesecloth and left to settle for a week. The fine particles of wax and the air bubbles should be skimmed off before the honey is bottled. When the honey in glass becomes crystallized it should be liquified before it is placed on the market. Heat the honey to a temperature of 140 to 160 degrees Fahrenheit and cool just as quickly as the honey is clear. Do not leave the honey remain crystallized for any length of time since a little fermentation may take place and cause carbon dioxide bubbles to form in the honey. These tiny white bubbles rise to the top when the honey is liquified and impair its appearance.

Only honey with a good flavor should be put on the market and a high quality product maintained at all times.

A NEW KINK FOR REQUEENING

By Rev. M. G. Hepner, St. Mary's College, North East, Pa.

This new method of requeening is not offered as a fact, but rather as an experiment, in which Pennsylvania beekeepers should take a lively interest. It has been successfully practiced in New York State, according to the propagator of the idea. Every beekeeper should know, not only theoretically, but practically how to raise his own queens, and should always have a few young queens in nuclei, to use in an emergency. However, all requeening methods have this disadvantage that there is more or less disturbance of the colony, and an interruption of breeding activities, unless it is done at a time when brood rearing has ceased and then it is not always a success.

It is claimed for this method that a young queen can be introduced without opening or disturbing the hive, and the old and the young queen work together in the brood chamber in full harmony. The old queen disappears at the end of the season. Generally, the old queen has to be removed by the beekeeper, and the search for the old queen often upsets the colony so that the safe introduction of the young queen becomes problematical. Here is the history of the method Mr. John Demuth, of Pembroke, New York, runs several apiaries, and is also a bee inspector. While inspecting the apiary of a certain beekeeper he came across a number of colonies in which he found two queens laying in the brood chamber. At first he thought it to be a case of supercedure, but it happened to be too frequent and regular an occurrence, and he began to ask questions. But he received no information from the close-mouthed beekeeper. Realizing that this was something valuable, he began to reason it out with himself and finally mastered the facts upon which this method is built.

During the honey flow when bees are busy and contented, take a plain section 4 x 5 (it ought to be a tall section, not a square one, because the tall section gives you a better area to work on, and it should not be a beeway section, to prevent bees entering it from outside), and with a cookie cutter, or similar instrument cut out a similar piece about 2 1-2 to 3 inches in dameter. See that there are some cells in the part above this round hole which contain honey. Then from a brood comb cut a similar piece containing emerging brood, and a few unsealed larvae. Fit this piece into the hole in the section, and then place this section standing upright on the corner of the bottom board, outside the hive, close to the outer hive wall. Close the outside of the section with a piece of board, and place a brick or stone against it to prevent the section being moved from its position. Everything must be bee-tight on the outside while bees from inside can enter the section through the space between the bottom board and the hive front. This has to be done a day or two before you take the next step. The second step consists in taking a ripe queen cell, from which the queen will emerge that day or the day after, and attach it to the top of the section on the side facing the hive above the patch of brood. The young bees which have emerged during the one or two days before you give this cell will welcome the young queen and protect her. She is in a separate hive of her own, but very soon acquires the scent of the big hive by coming in contact with the bees. When the mating instinct impells her to take her flight she does not enter the big hive, but simply passes around the edge of the section into the hive entrance and issues forth. On her return her impulse is to seek the brood nest to get ready for laying, and having just mated has no desire to fight. The old queen will not molest her since she is heavy with eggs and is in no condition to fight. Hence, a double court is set up, the old queen, with her attendants, and the young queen with hers, and the result is that even when the two queens meet afterwards, there is no trouble as in a case of supercedure. If there is a late summer or fall honey flow you will need a large brood chamber to accommodate the immense amount of brood. At the end of the season the old queen will disappear the young queen is wintered over, and the next season you repeat the process.

I have tried it only once, and failed because I did it at a time when there was no honey coming in and too late in the season. But I am going to do it on a larger scale next summer, and will report success or failure in this publication. It would be a very good thing for all of us if you also tried this out and send your report to me. The New Yorkers say, it works. In spite of all misgivings, it is worth the attempt. Experience is the best teacher.

A BEEKEEPER'S REFLECTIONS AND COMMENTS

By Frederick Hahman, Altoona, Pa.

HONEY SALES

We have ample food for reflection. When we review the efforts needed, in disposing of a bountiful crop of honey, gathered by our bees last summer.

Honey buyers have not been any too numerous and with prices none the best we must take things as we find them and sell as much of our product as possible at a fair price.

Pennsylvania heretofore has probably produced less than half of the honey consumed within its borders. It has been a good market for honey from the west and from New York State. We have a greater population than most of the other states and can reach buyers easier than can the outsiders. The time has come that we must assert ourselves and show that we can meet fair competition and hold our own in that trade which geographically belongs to us.

Naturally, it will require more effort to dispose of honey at a fair price. Honey is not a seasonable sales product. It will sell during the spring and summer months when less outside honey is liable to be shipped in. Let us take advantage of our markets during the summer months.

We must produce fine honey, offer it in appetizing form and endeavor to banish the poor comb honey, we so frequently see in our markets.

HONEY PRODUCTION

The watch word in honey production has focussed itself upon plans that will cut costs.

The most remarkable report in that line has appeared in the October 1932 number, of Gleanings in Bee Culture, beginning on page 623 under the heading "Short Cuts in Management" from the pen of Mr. M. J. Deyell, Apiary Manager of the A. I. Root Company. Briefly, it outlines the gathering of a great crop of honey, using a queen excluder over the food chamber throughout the season and saving an enormous amount of labor by that method. Mr. Deyell qualifies his remarks with the advice. "In regions where there is a short honey flow from alsike and white clover manipulating the food chamber in this manner might not work out so well."

A Wisconsin correspondent asks the question: "In using the food chamber, either shallow or deep, should there be a queen excluder between the food chamber and the brood chamber?"

Answer: Some permit the queen to have the run of two stories throughout the season, placing the excluder above the second story. However, in most localities this results in so much brood in the food chamber that there is not enough honey in it to supply the colony with during the fall, winter and spring. When extracting supers are given freely and the queen is permitted the run of two stories, the queen gradually moves her work in the upper story, leaving the combs of the lower story broodless or almost so. Under such conditions the combs in the lower story are often filled with pollen and the two story hive is no heavier with honey than a single story hive, thus entirely defeating the purpose of the food chamber.

That advice is from the pen of Mr. George S. Demuth, Editor of Gleanings in Bee Culture.

There are but few writers in the Annals of Beedom, who have so successfully solved reducing costs as has Mr. Pettit. Let's see what he says: "During the main honey flow there are two brood chamber operations required for all colonies and after that supering and special cases if any. First, the queens are to be confined to one story. This is a simple operation and pays well. Left all summer, the double brood chamber too often becomes plugged with pollen in the lower combs or the upper may become honey-bound too early and cause swarming."

I would, however, tell our young beekeepers to use caution. Pennsylvania has a honey flow such as Mr. Deyell encounters perhaps once in ten years and his method may result in disappointment. Try out a few colonies first, it is well to keep informed for the sake of experience.

In concluding it may be desirable to quote a few words from an article by an experienced honey producer, Mr. Eugene S. Miller, of Valparaiso, Indiana, April, 1932 number, of the American Bee Journal, page 146. Mr. Miller writes: "There are numerous ways of handling bees in the production of comb and extracted honey. In the last thirty years I have done much experimenting and have tried out many of the other fellow's chemes and many of my own. Most of the so-called methods have not proved satisfactory either requiring too much labor or being too complicated or they just wouldn't work."

A WORTHWHILE OPPORTUNITY

By J. C. Frazer, Branch Manager, G. B. Lewis Company, Wheeling, West Virginia

Every Pennsylvania honey producer should support the American Honey Institute in cash or honey during 1933. This support is urgently needed to continue what one western producer has written: "The greatest boost for honey ever attempted." Funds for beginning and continuing the Institute were first donated primarily by manufacturing interests allied to honey. This support is continuing but at least as much more is needed in the form of money or honey donations from producers to enable them to help themselves in creating a better honey market.

Not one cent of the money raised is used to pay any official a salary. Every cent is used to promote honey, as all time used in administration of the Insti-

tute is donated by the officers. In nearly every state there is a honey receiver and in these times when funds are scarce honey donations may be made by shipping honey to the state receiver, listed in the bee journals, and all the money received in the sale of such honey is passed on to the Institute for its work. Donations of honey are urgently needed.

Producers who do not feel the Institute is doing enough for them individually to warrant such a donation must have failed to avail themselves of the Institute service. You may receive free recipes, tried and tested in the Institute kitchen, to get published in your local paper. Get your county home demonstration agent to put on a honey demonstration using free Institute information. Make talks before schools or clubs using honey cooking information supplied by the Institute which you can get free for asking. No one has ever been able to put honey "on the map" alone, but working together we can succeed. The Institute cannot do much in your own locality **except through you.** Are you willing to help yourself this way?

Mr. Lush, of California, writes: "I am to give a talk before a business woman's club next month on honey and would like any help you can give me." Mr. Carr writes: "This year we joined the Rural Women during Farmers' Week and had the home demonstration agent give a talk on honey." Mr. Haven writes: "I received your kind reply and used the advice and circulars for a honey display at a church fair. It came off well and I do sincerely appreciate your help." Mr. Engle writes: "The scrap book and other material were received and our members commented very favorably on the work of the Institute. I enclose checks for $32.65 I secured for the Institute at this meeting."

If you wish to know more about the Institute watch the donated advertisements appearing in the bee journals monthly telling of contacts made. Write the Institute for help in your locality. The address is 417 N. Few Street, Madison, Wisconsin. Do what you can in money or honey to help in 1933 and most of all, USE THE INSTITUTE SERVICE YOURSELF.

VARIATIONS IN REQUEENING

By Wendell T. Card, Sylvania, Pa.

I requeened my entire stock of thirty colonies the last week in August. Very little nectar was to be had, the bees were cross and robbers bad. Certainly not favorable conditions for introducing. I ordered queens from three sources. Some were several days on the road. All were introduced in the mailing cages and for this purpose I prefer the three-hole cage. I placed part of the cages in each of the four ways listed below.

First, remove an outside frame from the brood nest and spread two center frames apart. With a knife, screw-driver or narrow chisel gouge out a bit of comb on the inside of each frame, down to the midrib. Do this just below the top bar in the portion of the frame filled with honey. Place the cage parallel with the top bars wire cloth down in the depression in one comb and crowd the other up to it. Replace your outside comb. All frames now occupy their original positions. There is no extra comb to take care of and the cage may be left alone indefinitely as there is no space left wherein undesirable combs may be built. The cage is liberally smeared with honey which is probably a good thing. I am indebted to Mr. Greene for this method.

Second, nearly all my full colonies are in two stories. This allows the most practical method I know of placing the cage in the cluster. Simply tip up the upper story and slip the cage between the bottom bars of two central frames pushing it up an inch or two between the frames. I placed my wire cloth down though I doubt if the position is important so long as the bees have access to the candy plug and the wire cloth. This method is quick, easy, mutilates no comb and leaves no space for extra comb building so the cage may be left indefinitely. I copied this plan from Harry Beaver, of Troy, Pennsylvania. I presume it might work as well in a single story colony but have not tried it.

Third, a few six hole cages I placed face down on top of the frames and covered them with several thicknesses of burlap. I also added an empty super shell and replaced the cover.

Fourth, a few I introduced to nucleii which I united to the colony to be requeened by the newspaper method.

One nucleus was opened very quietly after five days. The queen was out and had plenty of eggs in the frames but the slight disturbance caused the bees to ball her. She was returned to the cage and eventually accepted. All full colonies were left strictly alone for ten days or more. My experience in this line checks with that of others. "Leave 'em alone!"

At the end of twelve days an examination showed ripe cells in another colony, all the attendant bees dead, the queen still in the cage but vigorous and as large as a normal laying queen. I released the queen and she ran in with the bees. She seemed to be entirely at home. A tiny sliver of wood in the candy plug caused this near tragedy.

Of the thirty queens introduced in this variety of styles, 30 went into winter quarters.

I have given in detail the various methods of placing the cages. Now what factors were alike in all cases?

First, though nectar was short as stated all colonies had brood in all stages and an ample supply of stores, the supers being still on in most cases.

Second, all cages were introduced at the time of removal of the former queen.

Third, the time was late in the season.

Fourth, in all cases the cardboard over the candy was entirely removed before placing cages.

Fifth, except where noted all colonies were left strictly alone for ten days or more.

Which of these, if any, are the important factors?

I place considerable weight on the importance of removing the cardboard cover of the candy plug. I believe many strong colonies will release a queen in 48 hours or less when this cardboard is removed. I have known weak ones to be five days at the same job. In my own limited experience this quick release in strong colonies is not detrimental to the safety of the queen **provided the colony is let alone.** It gives just about the minimum interruption to brood rearing.

Past experience also leads me to expect safer introduction late in the season but before brood rearing stops. The work is less when supers are off but full supers doubtless add to the feeling of security in the colony and may serve to keep some trouble makers out of the brood nest.

I wish I might add some ready made conclusions to this record which would guarantee safe introduction. However, an isolated case proves nothing and perhaps it was just another case of "beginner's luck." To those who have no better plan this outline may be of help. To those already successful it can do no harm, and to those looking for the reasons for success or failure in their own methods it may possibly be a help in checking their own observations.

"PENNSYLVANIA BEEKEEPERS' MEETING"

JANUARY, 1933

"Greetings to the members of the Pennsylvania Beekeepers' Association from The A. I. Root Company."

Mr. Kirk has given me the privilege of bringing to you some of the things that I consider of importance and of interest to the Pennsylvania beekeepers. In the first place, I wish to agree with Mr. Oettle in what he said in regard to honey containers and the unsatisfactory receptacles that we are using in a great many cases as far as the consumer is concerned. It is to be granted that beekeepers have considered tall, cylindrical jars to be the best kind of a container

to show off their honey but from the consumers standpoint, it is not as satisfactory as a short glass container. Mr. Oettle has also placed before the Pennsylvania beekeepers a fine challenge and that is to originate a slogan for honey that will make the public honey-minded and honey-conscious. Let everyone give some real thought to this. We as beekeepers can certainly cooperate along this line. Speaking of cooperation, that leads me to make this statement, that in no group of producers do we find such a lack of cooperation as we do among the beekeepers. When one stops to think that there are probably over 100 kinds of honeys produced in the United States is it any wonder that the buying public is confused as to what the pure product is? We find honeys with different tastes and different colors, produced in the same locality during the season. We might add that each one of these honeys with a distinct flavor and color is enjoyed by a great many people. Therefore, every beekeeper should give considerable thought to the merchandising of his honey crop and should offer it to the public for what it really is. If he is selling honey produced from sweet clover, he should sell sweet clover honey as such and not as the only honey that is produced that is worth eating. In this day of modern transportation he may be talking to a person who comes from the buckwheat honey section of the United States and this person, not familiar with different kinds of honeys, may discount his claims considerably. We find too many beekeepers, there are just as many big beekeepers in this class as small ones, that offer their honey to the public claiming that they have the only kind of honey that is worth eating, that every other kind of honey down the road is not good. Let each and every one of us take time to explain to the consumer that they are buying a certain kind of honey made from a certain kind of flower and if there is any question in our mind that the honey is liable to prove unsatisfactory as far as taste goes, let us be sure that the customer is confident that they wish to make the purchase. A few years ago I was in Lexington, Kentucky, attending a meeting held during Farmers' Week. A large group of ladies were gathered in the room where the beekeeper's meeting had been held. One lady remarked that she had recently purchased a jar of honey from a beekeeper and it was not pure, and that the beekeeper had mixed honey with Karo baking syrup. She came to this conclusion because she had always been used to white clover honey and this honey did not taste like what she had always purchased before, neither did the color resemble what she called honey. When I explained to her the different kinds of honeys she could very easily see that what she had called an adulterated product was probably pure but ever since she made the purchase she had been broadcasting the fact that adulterated honey had been sold to her. There was hardly a woman in the crowd that realized that there was a variety of honeys. If we have buckwheat honey for sale, let us sell it as buckwheat honey. If we have sweet clover honey for sale, let us sell it as such, and if we do not have the kind of honey our customers want, let us be big enough to recommend some brother beekeeper or purchase from our brother beekeeper a supply to take care of our transient customers. With modern methods of producing honey we are creating a supply that must be marketed but we are not, as beekeepers, giving serious thought to the merchandising of our product properly. There are a few outstanding cases where the beekeepers are doing a good job of selling. Mr. Glebe, of Delaware Water Gap, told us a few years ago how he was handling a number of different kinds of honeys to create a long list of satisfied consumers. Let us cooperate and raise our volume of sales considerably.

Now, a great many of my friends here have asked about our pure beeswax candles. A year ago I told you something about the manufacture of our Church candles. I told you at that time that we had taken up the manufacture of these candles with the chief thought in mind of creating for the beekeepers a market for their surplus beeswax. You will recall that I told you something about the American Telephone and Telegraph Company working on a substitute for beeswax in their insulating department and at last announcing a substitute. This company had been large users of beeswax and although we did not sell them we knew that their using something else in the place of beeswax would affect the price considerably. Our advent into the manufacture of pure beeswax candles has resulted in the selling of a number of carloads of beeswax to other candle manufacturers and the using of carloads of beeswax in our own candle department. Since a year ago we have originated and marketed a candle for popular consumption known as a Honey Comb candle. These candles are made

of pure beeswax and are sold through the department stores, gift shops and other retail outlets handling candles. We hope that our efforts will result in an increased demand for the beekeepers' beeswax. Honey Comb candles made of 100 per cent pure beeswax with their unique appearance have many features that appeal to the buyer. Perhaps the main feature is that they do not bend over in hot weather. Beeswax candles do not smoke nor give off a disagreeable odor. Our beeswax has been greatly improved during the last year by a new method of refining beeswax and consequently, not only are we able to produce finer and better beeswax candles but beekeepers are benefitting by this improved method of refining in that they are getting better foundation.

It has been a great pleasure to be here today and to renew acquaintances among the Pennsylvania beekeepers. The Root Company wishes every beekeeper in the State of Pennsylvania the best of success during 1933 and the years to come.—D. C. Babcock, Adevrtising Manager of The A. I. Root Company.

THE EXACTING TECHNIQUE OF TREATING AMERICAN FOULBROOD COMB

By Thomas A. Berkey, Easton, Penna.

Technique:—That word has a rather fearsome sound and one does not often hear it applied to beekeeping by beekeepers. Yet almost no other occupation has a more exacting technique.

Pennsylvania is noted for her good cooks and housekeepers, and no small part of this reputation is due to the cook's ability to can and preserve fruit, vegetables, and meat in season.

The contents of each jar must be rendered sterile by one of the accepted canning methods, or the product of her work is lost. The housewife who develops the best "technique" loses the fewest cans by subsequent spoilage.

In this article I do not wish to advocate any particular treatment for combs from diseased colonies. Each method as it has been developed and improved has yielded good results if carried out thoroughly.

When the beekeeper attempts to disinfect combs he invades the field of Bacteriology and must conform with all the exacting rules and technique that are required of a bacteriologist to successfully combat his invisible enemy. Neglect or carelessness in any step or part of any particular method he chooses will lessen the chances of success and render his efforts so much wasted time and labor.

The formalin-alcohol, formalin-water, formalin-gas, and the newer chlorine-water treatments all yielded good results in the hands of their sponsors, because these men knew just what they had to accomplish and neglected no part or step in preparation of the combs to be treated. They skimped neither time, labor or material in the treating. They used the required amount of the chemical but no more than was necessary to destroy all the foulbrood germs in the infected combs.

Workers along these lines realize what harm can be done by failure to take each step as prescribed. The mere mention of the materials used and the method employed gives them a picture of what results to expect, for the training a bacteriologist receives makes him familiar with the methods and chemicals used and the results to be expected.

The directions given out when treatments are first made public are ample for a trained man to follow. The average beekeeper, however, has had little or no experience in handling chemicals and generally pays dearly for his experience through failure to thoroughly sterilize the combs. The beekeeper may even kill his bees by leaving too much chemical in the combs.

Sturdevant has estimated that each dead larvae has in its body about 2,500,000,000 spores and by repeated experiments proved that a concentration of 50,000 spores to a cubic centimeter is about the lowest that is dangerous. There are 1,000 cubic millimeters to a cubic centimeter and a cubic millimeter is more than a meal for a small larvae. Now this cuts our fatal dose down to 50 spores for each feeding. The average beekeeper does not take time to analyze such a

statement as Sturdevant has made. One larvae supplies 2,500,000,000 spores, enough to contaminate 50,000 cubic centimeters of honey and this amount of honey would make at least 50,000,000 fatal feedings for young larvae.

Nursing a colony along after disease has been discovered is a very poor policy. Many beekeepers are tempted to remove the comb when only one or two cells of diseased material are visible. I have never heard of this being a successful way of treating American foulbrood.

Who knows what part of the hive harbors the fatal germs. There may be a few cells in every frame in the brood nest, awaiting the time of need when those particular cells will be uncapped by the bees and the contaminated honey fed to the larvae.

The bacteriologist checks his work by running cultures in test tubes placed in an incubator and in a few days or at the most a few weeks knows something of the results he has accomplished.

The beekeeper can only give the comb back to the bees and await results. This confines a beekeepers experiments to one or two a year so for the most part he must depend on the experimental work being done by the bacteriologist. If the beekeeper is to profit by the work done by these men he must study their directions carefully and cut no corners, for each step has its significance.

An instance of this kind was emphasized in a bee magazine recently. The beekeeper treating with chlorine decided to move indoors for the job. He chose a room in which he had a lot of tin honey containers stored. The chlorine fumes permeated the room and soon ruined his honey containers. Yet the sponsors of this treatment advised all that used chlorine to do the work out of doors.

They also advise that every bit of honey be uncapped and removed. Water gives up its chlorine readily and evaporates leaving no harmful residue, but honey holds the chlorine much more effectively and will cause trouble if left in the treated comb.

Points of this sort may not seem of importance to the beekeeper when reading directions for treating combs, but failure or dissatisfaction with the method can often be traced to just such neglected details.

(Formaldehyde as a liquid or gas was tried extensively by Pennsylvania beekeepers when it was first recommended by Dr. Hutzelman. The numerous mistakes and difficulties similar to those listed above by Mr. Berkie proved unsurmountable barriers to success so that formaldehyde has been all but abandoned as chemical for treating combs. It is likely that chlorine also will prove impracticable. Ed.)

THE EXHIBIT AT THE FARM SHOW

The exhibit of honey and apiary products at the Farm Show was considerably larger this year than for any year previous. Those beekeepers who took part and sent honey to Harrisburg deserve considerable credit for helping to make the exhibit what it was.

Now is the time to lay plans for a more attractive exhibit for January, 1934. County groups especially should get together soon and determine who is to supply honey for the different classes. There is going to be real competition in the county and individual collective classes next winter.

Those winning money prizes at the Farm Products Show last January were as follow:

APIARY PRODUCTS EXHIBIT LIST—1933

Class 96—Light Comb Honey

Entry No.	Exhibitor	Address	County	AWARD Place	AWARD Amount
17	P. M. Beam	Carlisle	Cumberland	1	5.00
15	Treesdale Farms	Valencia	Allegheny	2	4.00
16	Floyd H. Sandt	Easton, R. D. 2	Northampton	3	3.00
10	W. O. Hershey	119 Pine St. Lancaster	Lancaster	4	2.00
12	Marcus A. McKnight	Carlisle	Cumberland	5	1.00

Class 97—Dark Comb Honey

Entry No.	Exhibitor	Address	County	AWARD Place	AWARD Amount
51	D. C. Gilham	Schuylkill Haven	Schuylkill	1	5.00
52	Treesdale Farms	Valencia	Allegheny	2	4.00
53	Floyd H. Sandt	Easton, R. D. 2	Northampton	3	3.00
54	Roy K. Howell	Kunkletown, R. 2	Monroe	4	2.00
50	Mrs. John E. Fox	New Cumberland	Cumberland	5	1.00

Class 98—Light Extracted Honey

103	John S. Eby	Manheim, R. D. 3	Lancaster	1	5.00
102	Wayne Shilling	Lebanon, R. 3	Lebanon	2	4.00
106	Myrton E. Gray	Venango	Crawford	3	3.00
107	Gillan Bros.	St. Thomas	Franklin	4	2.00
108	Treesdale Farms	Valencia	Allegheny	5	1.00

Class 99—Light Amber Extracted Honey

157	Floyd H. Sandt	Easton, R. D. 2	Northampton	1	5.00
155	D. C. Gilham	Schuylkill Haven	Schuylkill	2	4.00
156	Treesdale Farms	Valencia	Allegheny	3	3.00
160	A. T. Keil	Mars, R. D.	Allegheny	4	2.00
162	A. Linn Lesher	Chambersburg R. 9	Franklin	5	1.00

Class 100—Amber Extracted Honey

205	D. C. Gilham	Schuylkill Haven	Schuylkill	1	5.00
210	A. T. Keil	Mars, R. D.	Allegheny	2	4.00
206	Treesdale Farms	Valencia	Allegheny	3	3.00
207	Floyd H. Sandt	Easton, R. D. 2	Northamton	4	2.00
201	W. L. Hershey	119 Pine St. Lancaster	Lancaster	5	1.00

Class 101—Dark Extracted Honey

253	Treesdale Farms	Valencia	Allegheny	1	5.00
256	Thomas A. Berkey	Easton	Northamton	2	4.00
255	Roy K. Howell	Kunkletown, R. 2	Monroe	3	3.00
254	Floyd H. Sandt	Easton, R. D. 2	Northamton	4	2.00
252	D. C. Gilham	Schuylkill Haven	Schuylkill	5	1.00

Class 102—Crystallized Extracted Honey

306	P. M. Beam	Carlisle	Cumberland	1	5.00
305	Floyd H. Sandt	Easton, R. D. 2	Northamton	2	4.00
302	A. H. Hickok & Sons	Troy, R. D. 2	Bradford	3	3.00
307	John Kleck	care P. R. R. Union Station Pittsburgh	Allegheny	4	2.00
309	A. T. Keil	Mars, R. D.	Allegheny	5	1.00

Class 103—Crystallized Extracted Honey

354	Floyd H. Sandt	Easton, R. D. 2	Northamton	1	5.00
355	P. M. Beam	Carlisle	Cumberland	2	4.00
356	Thomas A. Berkey	Easton	Northamton	3	3.00
351	W. O. Hershey	119 Pine St. Lancaster	Lancaster	4	2.00
352	A. H. Hickok & Sons	Troy, R. D. 2	Bradford	5	1.00

Class 104—Creamed Extracted Honey

403	Floyd H. Sandt	Easton, R. D. 2	Northamton	1	5.00
401	D. C. Gilham	Schuylkill Haven	Schuylkill	2	4.00
402	Treesdale Farms	Valencia	Allegheny	3	3.00
404	Thomas A. Berkey	Easton	Northamton	4	2.00
400	Trexler Farms	Allentown	Lehigh	5	1.00

Class 105—Beeswax

Entry No.	Exhibitor	Address	County	AWARD Place	AWARD Amount
457	Treesdale Farms	Valencia	Allegheny	1	5.00
459	Thomas A. Berkey	Easton	Northamton	2	4.00
452	Trexler Farms	Allentown	Lehigh	3	3.00
451	Chas. D. Ruth	Emaus	Lehigh	4	2.00
458	Floyd H. Sandt	Easton, R. D. 2	Northamton	5	1.00

Class 106—Individual Collective Exhibit

476	D. C. Gilham	Schuylkill Haven	Schuylkill	1	15.00
478	Floyd H. Sandt	Easton, R. D. 2	Northamton	2	10.00
479	Thomas A. Berkey	Easton	Northamton	3	5.00
480	A. T. Keil	Mars, R. D.	Allegheny	4	2.00
475	Trexler Farms	Allentown	Lehigh	5	1.00

Class 107—Honey Vinegar

500	W. O. Hershey	119 Pine St. Lancaster	Lancaster	1	1.25
502	Treesdale Farms	Valencia	Allegheny	2	.75
501	D. C. Gilham	Schuylkill Haven	Schuylkill	3	.50

Class 108—County or Association Collective Exhibit

525	Lehigh Valley Beekeepers' Ass'n	1015 Maple St. Allentown	Northamton) Lehigh)	1	30.00
528	Monroe Co. Beekeepers' Ass'n, Roy Howell, Sec'y	Kunkletown	Berks) Monroe	2	20.00
526	Allegheny Co. Beekeepers' Ass'n, John Fleck	P. R. R. Union Station Pittsburgh	Allegheny	3	10.00

4-H Club—Honey
Class 109—Light Comb Honey

555	Frank Shontz	Conneaut Lake, R. D. 3	Crawford	1	5.00
550	Paul Gregory	Gilfoyle	Forest	2	4.00
554	Winfield Gilham	Schuylkill Haven	Schuylkill	3	3.00
556	Walter Rex	R. D. 2 Lehighton	Carbon	4	2.00
553	Marion Cochran	Gilfoyle	Forest	5	1.00

Class 110—Dark Comb Honey

601	Winfield Gilham	Schuylkill Haven R. D. 3	Schuylkill	1	5.00
602	Frank Shontz	Conneaut Lake, R. D. 2	Crawford	2	4.00
605	Walter Rex	Lehighton	Carbon	3	3.00
604	Leonard Guiher	Grampian	Clearfield	4	2.00
603	Leon Rex	Lehighton, R. 2	Carbon	5	1.00

Class 111—Light Extracted Honey

650	Edward Zinn	Dover, R. D. 1	York	1	5.00
654	John King	York, R. D. 10	York	2	4.00
652	Mary Altland	Dover	York	3	3.00
653	Ray Pfaltzgraff	York, R. D. 4	York	4	2.00
651	Julius Gross	Dover	York	5	1.00

Class 111-A—Light Amber Extracted Honey

Entry No.	Exhibitor	Address	County	AWARD Place	AWARD Amount
707	Floyd Lippet	Curwensville	Clearfield	1	5.00
706	Leon Rex	Lehighton, R. 2	Carbon	2	4.00
708	Walter Rex	Lehighton, R. 2	Carbon	3	3.00
705	Oliver Perkins	Shinglehouse	Potter	4	2.00
703	Max Dunshie	Shinglehouse	Potter	5	1.00

Class 112—Amber Extracted Honey

754	Chas. E. Lowther	Conneaut Lake R. 4	Crawford	1	5.00
755	Arthur Hazen	Conneaut Lake R. 4	Crawford	2	4.00
753	Lee Kearney	Brockway, R. 1	Jefferson	3	3.00
758	Eugene Hoffman	Butler	Butler	4	2.00
756	Leon Rex	Lehighton, R. 2	Carbon	5	1.00

Class 113—Dark Extracted Honey

809	Winfield Gilham	Schuylkill Haven	Schuylkill	1	5.00
810	Donald Pizor	Jackson Center	Mercer	2	4.00
811	Alexander MacRae	Grove City	Mercer	3	3.00
800	Paul Cochran	Gilfoyle	Forest	4	2.00
819	Bland Tait	Mercer	Mercer	5	1.00

VOCATIONAL
Class 114—Light Comb Honey

853	Chas. E. Wolf, Jr.	307 College St. Palmyra	Lebanon	1	5.00
851	Robert Royer, Jr.	Lebanon, R. D. 6	Lebanon	2	4.00
852	F. W. Walp	Picture Rocks	Lycoming	3	3.00

Class 115—Dark Comb Honey

877	Harry Swisher	Muncy Valley	Sullivan	1	5.00
876	Walter Weber	Sugar Grove	Warren	2	4.00

Class 116—Light Extracted Honey

903	Harry E. Minnich	Annville, R. D.	Lebanon	1	5.00
901	Robt. Royer, Jr.	Lebanon, R. D. 6	Lebanon	2	4.00
906	Henry Newbold	Dover	York	3	3.00
900	Chas. E. Wolf, Jr.	307 College St. Palmyra	Lebanon	4	2.00
905	Kenneth S. Perdue	North East	Erie	5	1.00

Class 116-A—Light Amber Extracted Honey

928	Chas. E. Wolf, Jr.	307 College St. Palmyra	Lebanon	1	5.00
926	Chas. Forrest	Ulster, R. D.	Bradford	2	4.00
930	R. A. Fordyce	North East	Erie	3	3.00
931	Maurice Warburton	Muncy Valley	Sullivan	4	2.00

Class 117—Amber Extracted Honey

957	Robert Newton	North East, R. 3	Erie	1	5.00
952	Chas. Forrest	Ulster, R. D.	Bradford	2	4.00
958	Herbert Loop	North East	Erie	3	3.00
951	Robert Royer, Jr.	Lebanon, R. 6	Lebanon	4	2.00
955	Richard Farver	North East	Erie	5	1.00

COOPERATIVE MARKETING

The following is a part of the Biennial Report of the Department of Agriculture and Markets of Wisconsin. It is dated January, 1933.

HONEY PRODUERS MEET DIFFICULTIES

"In 1930 over 140 beekeepers of Wisconsin joined the Mountain States Honey Producers Association, a large-scale marketing organization, which has been established in 1926 and has operated successfully. A few carloads of the 1929 Wisconsin honey crop were turned over to the association in the spring of 1929 (the 1928 crop) with the understanding that about 5 cents a pound would be advanced as soon as this honey was in the warehouses. At about this time the honey market went off and the association held it in storage hoping for a new turn in the market, which never came. A few more cars were turned over to the association by Wisconsin producers. Not a cent on the honey sent to the association has been paid to Wisconsin producers. The reasons for this situation are: a drop in the honey market; holding the product too long; expenses connected with freight, storage, insurance, taxes, interest, office overhead, deterioration, and the like. All this absorbed nearly all of what the product brought when it was sold."

(This report shows that there is considerable expense connected with cooperative marketing of honey and that every effort should be made to market honey individually before cooperative marketing is considered. Ed.)

A SERVE YOURSELF MARKET

Mr. Harry Beaver, of Troy, has built a small glass roadside market from which to sell honey when he is not at home. This honey stand was made small because it was an experiment and builder apparently had some misgivings as to whether or not it would be a success.

The roof and frame work are made of rough posts. The part which holds the honey is built of glass so as to show the product to good advantage. Price cards are on the cans of honey and a small box of change is there so that anyone wishing to make change can do so. At the end of six months there was five cents more in the box of change than should be there to pay for the honey sold.

If I remember correctly the largest amount sold for any one day was $4.50 worth of honey. Some days there is of course no sale of honey.

Sometime ago a truck driver and his helper stopped during the night to buy honey. After they had made the purchase the driver said, "They are the ————people to leave all that money out there."

Mr. Beaver is located in a place very well adapted to a serve yourself market. There are other sections of the state where this type of market would not be a success.

CUMBERLAND COUNTY BEEKEEPERS REORGANIZE

On March 28th the Cumberland County beekeepers reorganized the old beekeepers association which had not functioned for several years. At the meeting, a new and simplified constitution was adopted. One of the articles in the new by-laws reads as follows: "No officer may be elected for more than three consecutive terms."

The new officers of the association are: Raymond W. Fisher, President; John H. Hess, Vice-President; P. M. Beam, Secretary-Treasurer.

PACKAGE BEES FOR POLLINATION

The Franklin County fruit growers are using package bees rather extensively for the purpose of strengthening weak colonies. These growers introduce a three-pound queenless package to a weak colony to develop an efficient colony for pollinating the fruit. At a recent meeting over 300 pounds were ordered by the different growers. The packages will arrive about the time the apples come into bloom.

ERIE COUNTY NOTES

Mr. C. L. Wright, Secretary of the Erie County Beekeepers Association has been transferred back to Erie from Driftwood where he had been station agent for a year or longer.

LANCASTER ASSOCIATION MEETS

The Lancaster County Beekeepers Association held their annual winter meeting on February 16th. At this meeting $10.00 was voted the American Honey Institute. The officers elected for the coming year are: Charles S. Hess, President; Norman M. Shreiner, Vice-President, and D. L. Burkhold, Secretary-Treasurer.

COLUMBIA COUNTY NOTES

Mr. Clyde Long, of Columbia County, plans to send a truck load of bees into Luzerne County for the purpose of pollinating fruit. Several of the fruit growers wish to have bees in their orchards during blossoming time, but do not care to own them. Mr. Long also plans to leave for the South soon to take care of his apiary in Georgia and if necessary move his bees to a section where they will get a large crop of honey. Tupelo yields heavily in the section where his bees are located.

PENN BEEKEEPERS EXTEND THEIR SYMPATHY TO GEORGE REA

The friends of Mr. George Rea, of Ithaca, grieve the loss of his daughter, who was killed recently in an auto accident at Port Matilda, Pennsylvania. Those of us who have children appreciate the grief that a loss of this kind brings with it.

REVIEW OF THE SEASON

The winter losses vary for different sections of the State. Starvation has taken a rather heavy toll in sections where the fall honey flow was not favorable. In the Southern counties and all through the central and westcentral parts of the state losses have been rather heavy from this cause.

Many colonies that were weak last fall died as usual during the winter months. As soon as the older bees died off the colonies became too weak to maintain the hive temperature. Winter losses as a whole have been a little heavier than for last winter. The severe winds and cold spells during March of this spring have retarded brood rearing so that most colonies are a little below normal for this time of the season. While the actual winter loss will not be known until the end of April the indications are that the losses for this winter will amount to between 12 and 18 per cent of all colonies.

The bulk of last year's crop of honey has already been sold. Most of the large producers are sold out or have less than 10 per cent unsold and this should be disposed of before the new crop is harvested. A few scattered lots are still in the hands of the beekeepers but this is mostly second grade honey or honey homewhat distant from good markets. In some sections the beekeepers are buying honey to hold their trade until July, while in others the market is not supplied as it should be.

The prices for honey in this State have declined gradually since last December. This decline has been due largely to the dumping of honey from outside the state or from beekeepers who have been overly anxious to dispose of

their entire crop early in the season. The decline in the buying power of the public has also been an important factor in the price change.

A number of grocery stores in the northwestern part of the state are selling crystallized honey in sections and, also sections badly moth eaten. This honey was sold to the stores at low prices but because of its condition did not resell. As a result, considerable antagonism has developed by the storekeepers against honey. Most of this honey was goldenrod or aster honey trucked into Pennsylvania from a neighboring state.

BRADFORD COUNTY NOTES

By Harry W. Beaver

This is a paper combining my talk on gassed combs and my usual notes. A week ago I visited several of our out yards and had occasion to examine five colonies of varied strength and was surprised to find that they had no brood not even an egg, with the exception of one colony which had a small patch of eggs in the center of one comb. The bees were in good condition as to strength and stores. As it appeared they had not consumed hardly any stores, and the combs were bright, all this denoting perfect wintering. And from what we have seen of unpacked bees we believe in packing even for a mild winter, as the bees do not wear themselves out by premature brood rearing and keeping up cluster heat, and being enticed to fly when the weather is not favorable.

Honey has been moving slowly all winter, and altho we have worked hard, sales have been discouragingly slow. Grocers tell me that cheap syrups do not sell very well either. So many folks that usually used honey have cut expenses to the bone (a soup bone at that) and honey seems to be the first to be left off the list.

All thru our section price cutting has run rampant, but when the working people do not have money, no matter how cheap, they will not buy if they can possibly get along without. This is borne out in that price cutters paradise Elmira, where they say honey is selling slow in spite of low prices. From now on we do not look for much honey to be sold through this section, as this is a good year for making maple syrup, and that holds the center of the stage for the balance of the season.

Clover is looking better than we expected to see it at this time considering the open winter and the freezing and thawing it has had.

At the Harrisburg Meeting I gave my experience on gassing combs with Formalin gas. To make my gas room more efficient, I rigged a water heater and tank to evaporate the formaldehyde solution more rapidly in order to make a denser gas. I gasses thousands of combs with this outfit and they are in use in most of our yards, but two yards in particular have nothing else. These two yards have been made up with swarms shaken from foul brood colonies and gassed combs were put in both brood nests and supers. The first year no disease. Second year one colony showed disease. Third year five colonies showed disease, and aside from that, disease keeps creeping out here and there in other yards. Why? We took the greatest care to have all cells of honey removed from the combs before and after gassing. The combs were carefully scrutinized at every handling, and we thought we were successful, but Mr. Reese chief apiary inspector of Ohio stated that disinfecting inhibited growth of bacteria and that sooner or later under favorable circumstances it would begin to grow again. Mr. I. N. Betzinger, of Marcellus, N. Y., stated years ago that spores of American foul brood were capable of growth after lying dormant for as long as fourteen years. Now my theory is that these spores get waxed over when bees get the comb ready for the queen to lay in, and do not get killed by the disinfectant, and when for some reason the bees reconstruct a portion of comb and use the same wax as they do, these spores are uncovered and then we have a case of F. B.

For the time being I am convinced that a good share of our disease problem came from this source. Of course there is more or less infection from outside sources, but I believe the elimination of this danger by destroying diseased combs will more than reduce infection by half.

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THE PENNSYLVANIA BEEKEEPER

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OUR BIG SUMMER PICNIC

Our picnic this year will be held at Stillwater, Pa., near Benton, on Saturday, August 26th. Consult your road map for most direct route. McHenry & Son will be our hosts. Any one that attended when our picnic was held there before will know the good time that awaits those that attend.

A good program is in the making, among which will be snapshot speaking from prominent beekeepers and others. Contests of various sorts for which prizes will be awarded. Bring your smoker and your favorite fuel and enter the smoker contest. There will be fun as well as instruction.

OVER FIFTEEN YEARS TO PRODUCE A POUND OF HONEY

Honey is made in the bee hive by the honey bees from the sweet nectar gathered from the flowers. When those flowers are blooming that secrete nectar the honey bees fly out from the hive and gather the tiny drops of nectar until they have filled their honey sacs. Several hundred flowers may be visited before the honey sac becomes full and the bee is ready to return to the hive. When the sac is full the weight of nectar carried therein equals about half the weight of the bee. The number of loads carried to the hive in a day by one bee are not many. Each bee will make only from 8 to 12 trips. On each trip, however, it will fly a distance of about five miles so that the total distance traveled in a day amounts to between 40 and 60 miles.

There are 5000 bees to the pound so that 10,000 bees will have to make one trip each to the fields to bring to the hive one pound of nectar.

As the nectar is secreted from the flowers it is a thin sweet containing on an average about 33 per cent sugar. The field bees take this sweet back to the hive and turn it over to the young bees within. They store the nectar in empty cells. Then by means of a special ripening process the water is evaporated from the nectar so that the final product honey contains only 18 per cent water.

Twenty-one thousand bees would have to make one trip each to the fields to gather enough nectar to produce one pound of honey. The total distance traveled by these bees would be 105,000 miles or more than four times the distance around the world. In other words, if one bee were to gather enough nectar to make one pound of honey it would have to make 21,000 trips to the fields and would have to travel a total distance of 105,000 miles. Under the nectar producing conditions that the flowers have in Pennsylvania this bee would

require more than 15 years in its task of gathering nectar for one pound of honey. In spite of all the labor encountered in producing honey a single colony may produce over 100 pounds in a season. This great accomplishment is made possible only because of the great numbers in a strong colony of bees. In a colony there may be 50,000 or more individual bees.

Honey as gathered and stored by the bees is nature's purest sweet. It has many uses. It is a table sweet, it is used for medical purposes and is used in cooking.

Honey mixed with peanut butter makes an excellent spread for sandwiches. Equal parts of honey and peanut butter or one-third honey and two-thirds peanut butter may be used. Strained honey beaten with butter, also, makes a good sandwich filler. This combination of butter and honey can be used as a hard sauce.

A fine recipe for making honey all-bran cookies is as follows:

1-2 cup sugar	1 cup flour
1-4 teaspoonful cinnamon	3 cups Kellogg's All-Bran
1-4 teaspoonful ginger	1-2 cup honey
1-2 teaspoonful soda	1-2 cup milk
1 teaspoonful baking powder	1-2 cup melted butter

Mix and sift sugar, flour, baking powder, soda and spices. Add Kellogg's All-Bran, honey, milk and melted butter. Drop from a spoon on buttered baking sheet. Bake for 15 minutes in a modcrate oven. (Reprint from "The Mirror," New Zealand).

BEESWAX ITS USES AND PROPERTIES

Beeswax does not disintegrate rapidly as do most products of nature nor is it attacked and destroyed by bacteria. A cake of wax can be kept for many years and still have the same properties. There are, however, some signs of extremely slow aging of beeswax. After a time the surface of the wax develops a whitish powdery appearance which might be compared to rusting on iron. This whitish formation is often called the "bloom" and is characteristic of other natural waxes. The bloom is easily removed by rubbing the surface of the wax. A colored wax shows the "bloom" on the surface more quickly than does the natural wax.

The whites deposited on the surface appear to have no effect upon the remaining wax, it forms sufficiently slowly to merit no consideration under ordinary commercial uses of beeswax.

In medieval times beeswax was used to make sealing wax. Turpentine beeswax and coloring matter, generally vermillion were used. Beeswax, rosin and turpentine may also be used for cheaper grades of sealing wax. The turpentine is mixed with wax or the combination of wax and rosin to make a thick paste. After the paste is used to form a seal the turpentine evaporates and leaves the hard wax.

WATER AND CHEMICAL PROOF PAINT

Some photographers use a water and chemical proof paint to cover wooden containers for the storing of chemicals used in photography.

The paint could undoubtedly be used for other purposes. Its formula is as follows: 3 lbs. paraffine, 1 lb. beeswax, 2 sticks sealing wax (old style red), 1 piece of rosin about the size of a small peach.

Heat until all the ingredients become liquid. Stir and use while hot.

HEAVY LOSS SUFFERED FROM UNUSUAL CAUSE

An unusual loss of bees was suffered by Mr. M. L. Breum, of Centre County. He looked over his apiary on a warm day of March and noticed that the bees were working rather actively. This was quite a surprise at such an early date.

He visited the yard again about ten days later and discovered that the bees in about 15 of the 39 colonies had died. There were many dead bees on the bottom board and in front of the hive. During the next few weeks other colonies died until all but nine were a total loss.

An examination of the combs showed that the unsealed honey in the combs was badly fermented and gave off a sour odor. When combs containing this sour material were placed in normal colonies the bees there died also. Mr. Breum was at a loss to know the cause of such a sudden and heavy mortality among his bees.

FIRE DESTROYS THE HONEYHOUSE OWNED BY MR. CORNWELL

On the 24th of June the honeyhouse owned by Mr. Cornwell, of Mansfield, took fire and burned. The structure and contents were entirely destroyed. Fortunately a small amount of insurance was held on both the building and its contents.

A number of milk cans containing honey went through the fire. About one-half of the burned honey still in liquid form remained in the containers.

Walter Doud, of Mansfield, has purchased an attractive residence on the edge of Mansfield. He has constructed a small roadside market to sell honey and vegetables.

Mr. John D. Nelson, of Ridgway, plans to continue the bee business left by the death of his father. Mr. Nelson is well qualified for this work since he has worked for Morley Pettit and several other large beekeepers. During the past few years Mr. Nelson has been a mechanic in one of the large shops in Erie.

ALLEGHENY COUNTY NOTES

By A. T. Keil

We have an extra amount of white sweet clover here on the farms, sown for cover crop in the orchards. It is now in full bloom and the bees are getting some nice honey from it. I have put on comb honey supers and the bees have started in them.

I noticed a few sweet clover fields north of Butler, but outside of that prospects are not bright for much honey. The basswood is about to bloom and with the rains we have been having should produce a nice lot of honey this year.

Bees that had plenty of stores last fall came through in fine shape and secured a lot of honey from peach and apple bloom. Crab apple follows fruit bloom and helps a lot (in this locality). Locust produced but not sufficient to extract. I save this for winter stores, then in case there is not sufficient honey in hives for winter give it back.

BLAIR COUNTY NOTES BY FREDERICK HAHMAN

The season up to date, has been a peculiar one, with ups and downs, more of the latter than of the former.

What information I was able to gather, as to how bees wintered, was not encouraging, many apiaries showed weak colonies, when a somewhat delayed spring opened. Actual winter losses were greater in many cases, than would have been, had the colonies received due care during the previous fall. Many colonies of dilatory owners, went into winter quarters unprovided with ample stores.

There was plenty of rainy weather, this spring, usually the portent of a good honey flow. Colonies with plenty of stores, came thru the mild winter strong in bees.

The first real setback occurred during the Apple and Dandelion blooming period. We had rainy weather during all of that time, so that colonies gathered

less nectar than the rapidly increasing brood consumed. Some of my colonies began to run short of stores and had to be fed. After the apple and dandelion bloom we had a pretty fair flow from crab apple and hawthorn. Then came weeks of no forage. Colonies that had too much sealed stores, from the previous year, were drawn upon to help their less fortunate neighbors. The removal of honey also gave the queens space to expand their brood nest.

The period including the last days of May, is the time white clover, our dependable crop for surplus, starts to bloom. Comb honey section boxes are given about the first week in June. Only one super was given, instead of two as usual, for it had become evident that clovers were not plentiful having suffered during the past mild winter.

During two weeks of June, we had a record breaking hot spell, bees had nothing to work on, I had to feed nearly one-half of my colonies, which were then most populous. I have kept bees for over fifty years, but never before had to feed them in June.

The honey flow did start, after a rain, about the middle of June. During the latter part of the month we had a flow of basswood honey. Immediately before the basswood yielded, I found that bees were bringing in some honey dew, also found the drones clustering between the outside combs and sides of the hives. Worker bees were seen wandering about on the combs with propolis in their pollen baskets. These are sure signs that the honey flow was going glimmering, however, the basswood flow, and a few showers saved the day, and at this writing (July 8th) bees are working hard storing honey. I do not know from what source, but think it is white and Alsike clover, which are more abundant now, than during their regular blooming period. Sweet Clover may also be helping out.

So far I have taken off no finished sections, if this flow keeps on, the bees will finish some soon, we are expectantly hopeful.

I have managed my apiary, with some modification, on one of the plans of "Demareeing" comb honey colonies, that is, having the surplus brood above the section supers. It worked rather good for me.

Of the forty colonies I had only one swarm and I believe that it was caused by an oversight on my part. I have in my yard four strong colonies of Carniolans, and to keep them from swarming, without removing any of their brood, I consider, somewhat of a fine art, but it did require some hustling.

The colonies are of large size and had the season been a good one here, I believe they would have gathered a record crop of honey.

Honey does not sell at all here just now, it is being offered at ridiculous prices, however, that does not help to move it.

CRAWFORD COUNTY NOTES

Myrton Gray, Venango

Our honey flow has been very poor to date—July 5th. The bees consumed considerable more than they gathered during fruit bloom, due to continuous rains. Some honey was gathered however from wild crab apple, thorn apple, and blackberries. Very little clover honey was stored and prospects are not too good for Sumac or Basswood. A few of the strongest colonies gathered about one super of mixed surplus honey, but most colonies none. Conditions were somewhat better for Central Crawford County than for the Western part of the County.

GARDEN SPOT NEWS

By W. O. Hershey, Lancaster, Pa.

Bees wintered well using quite a bit of stores and those having plenty built up very nicely. Some of the colonies in two stories and in Modified Dadant hives swarmed at end of fruit bloom. Fruit bloom and dandelion came along

with bad weather and apparently did not amount to much. By May 28th, the time to put a hive on scales and put supers on, most bees were in good shape. The hive put on scales May 28th weighed 97 pounds. By July 1st, this hive weighed 109 pounds with no honey in the supers. The hive on scales in 1932 had advanced 137 pounds by the same date. Supers were put on this year on May 28th for locust bloom which came one day and were browned the next, it produced no honey. In 1932 this bloom lasted from 10 days to two weeks, and advanced the scales nearly 50 pounds.

With this flow missed, we had to wait on clover which was a very good stand with lots of volunteer clover in roadside pastures. We kept waiting the whole month of June expecting something to come our way. At this writing—July 1, comb honey colonies have one super partly filled and most extract colonies have little or no honey in supers. This appears to be our whole crop. It seems very odd the three weeks we should be head over heels in work we have nothing to do.

In sections of the county where there is poplar, the bees fared a bit better since they produced about 40 pounds in supers from this source.

Apparently this is first failure in this section for a period of 25 years. The outlook for honey appears to be nearly 340 days away.

LYCOMING COUNTY NOTES

By Harry A. Merrill

The bees have come thru winter in very good shape with a very small loss. About ninety per cent of them had plenty of store to carry them thru the period until fruit bloom. Owing to the fact that the weather was cold and wet, pollen was very scarce and queens did not lay properly until pollen became available about April 1. When fruit bloom did open weather was again unfavorable hence no nectar was obtained from it.

Spring feeding became necessary for about 25 per cent of the colonies. Our next source of nectar should have been from locust but it failed to bloom. At the present writing—July 2, clover has also failed owing to the fact that we did not have much of a stand of alsike and what we have is from white clover. Having two outyards located in basswood region we are hoping to get a fair crop from this.

Bees are in top strength for buckwheat and if this fails—well it will be just too bad for us beekeepers—so here is hoping we and all of the gang get a bumper crop as a last resort.

SCHUYLKILL COUNTY NOTES

By Warren A. Malick, Pottsville, Penn.

Bees came thru the winter below normal in strength. Colonies with plenty of reserve honey, however, built up very fast, while many that were short of stores starved or remained so weak that they have not yet attained full strength.

The honey flows so far have been a failure. Weather conditions were not favorable during fruit bloom.

White and Alsike Clover were plentiful but no nectar of any account was secreted, in fact, the bees have less honey at this date than for any similar period that I can remember.

One farmer reports hiving 17 swarms during May and June and after a few weeks but six remained. The others evidently joined the Hunger Marchers in search of better pastures.

Recent rains have helped, it seems, as the bees are working better.

Last year's honey crop is well cleaned up with most of us waiting and hoping for a small crop at least.

A. F. B. is very troublesome in some parts of the county.

BRADFORD COUNTY NOTES

By Harry W. Beaver

Since last issue our hopes went as high as 100 and as low as zero. To begin with our bees came thru with but little loss of colonies and strong in bees, fruit bloom, mustard, etc., yielded honey enough to fill the brood chambers (something which hardly ever happens in this locality) clover looked fine, basswood was budded for half a crop atleast. The clover bloom came with a rush, bees entered the supers and a honey crop seemed assured, till hot dry days kept coming and lo, the honey crop did not appear and as a result we have precious little honey to extract. Colonies that were shaken on foundation in treatment of American foul brood and which usually make one to three supers of comb honey, made none and many of them did not succeed in drawing all of the foundation, and those shaken last had to be fed to carry them over to the buckwheat flow. Some locations have the usual amount of buckwheat while others have very little.

We are using this spare time to do work that usually is left go altogether or has to be skimped. At present we are doing a lot of repairing, also thinning our apple crop.

REVIEW OF THE SEASON

The Alsike Clover honey flow has again proven to be very disappointing as is indicated by the reports from the different sections of the state. Locust also proved to be a failure.

Limited sections of the state have reported a fair crop of honey for this season. The southeastern corner and the southwestern corner obtained a fair crop from Tulip and other wild flowers. While in the north central area the bees gathered a very good crop from raspberry, sumac and alsike. Sweet Clover is yielding moderately well but the amount grown in this state is very limited. Basswood also has failed to yield as expected. Because of the failure of most of the early sources of nectar light honey will probably be scarce over most of the state.

The writer had the following experience which emphasizes the great variety of conditions encountered in the State of Pennsylvania.

Over a period of four days the following counties were visited: Center, Elk, Cameron and Potter and in each county there was a moderate honey flow from a different source. In Center county the flow was from Sweet Clover, in Elk county from Wild Raspberry, in Cameron county from Sumac, and in Potter county from Alsike Clover.

It is possible that Buckwheat and fall flowers will yield a good surplus in sections where they are abundant.

GLIMPSES OF APICULTURE IN ANTIQUITY

By M. G. Hepner, North East

The average beekeeper, I venture to say, believes that real Apiculture had its beginnings only with the invention of the movable comb hive, the honey extractor, and comb foundation. He knows that bees were kept before these epoch-making inventions, but that beekeeping was only an infant wrapped in the swaddling clothes of box hives, log gums, straw skeps, etc., and that honey could be taken from the bees only by cutting out combs and squeezing the sweet contents from the cells, or by melting down the honey combs. That the resulting honey crops were small, that the quality of the honey obtained was poor, that wax was considered very precious on account of its scarcity, and that honey itself was high-priced owing to the small amounts procured from each "swarm," is also his stock in trade when he thinks of apiculture in the days gone by. But, although some of these statements are true, they are true only in part, and modern study of the history of apiculture has brought out some astonishing facts. In very recent days, this study has made rapid strides; it has escaped from the bonds of the dry classical scholar who read the ancient authors more

for the sake of the language in which the works of a Virgil or Aristotle were written, and has been enthusiastically and joyfully taken up by the scientist, the entomologist, the chemist, and others who at the same time are practical beekeepers, for only to such men can the records of antiquity regarding apiculture be of real interest and lasting value. The year 1932, just passed, has seen great progress in the study of beekeeping history from the dawn of human society on through the ages of Greek and Roman Antiquity, not forgetting the history of apiculture in ancient Asia and Africa. Men like Dr. H. Malcolm Fraser and Canon Dennett in England, Billiard in France, Klek and Armbruster in Germany, by their investigations and critical research in the works of the ancient writers on apiculture have contributed untold wealth of information to our present-day knowledge of the history of the rise and decay of Apiculture in ancient Greece and Rome. And I am certain that 1933 and the following years will produce a rich harvest of knowledge for the average beekeeper. For, as Dr. Fraser points out, "a study of ancient beekeeping is a necessary part of the equipment of any beekeeper who wishes to understand the principles upon which his art is based."

When did man first become a beekeeper? That is a secret which we never shall fathom. That bees were a source of sweet nourishment, and therefore highly valuable, was known to primitive man long before the neolithic age, which scientists place at about 10,000 to 20,000 years ago. In the Caves of Arana, in Valencia, a Province of Spain, we can see roughly painted on the walls by a primitive artist, a neolithic honey gatherer who has let himself down on a grass rope to a cavity in a steep rock wall, whence he is taking combs of honey which he places in a grass bag or basket, whilst the disturbed bees fly all around him. We admire the courage of the first man to eat an oyster; what is that compared with the bravery of the first man to tackle a nest of wild bees. Naturally, man would soon think out a scheme by which he could manage to have such useful creatures in a more convenient place where they would be more easily controlled and "robbed," and thus the first steps toward the "keeping" of bees were taken.

Written history shows us that the bee and her products, wax and honey, were not only well known, but already systematically cultivated and harvested. In ancient Egypt we find beekeeping and honey production already established as a regular occupation as far back as the First Dynasty, about 3600 B. C. Bees were then, as now in Egypt, kept in cylindrical hives made of clay, similar to sewer pipes, with a wooden plug in the rear, and a similar wooden disk in front, with a hole in the front to serve as entrance. The honey was taken out from the rear, then pressed from the combs by a machine very similar to a wax press, and the resulting liquid poured into stone jars. This process we are enabled to follow in detail in one of the many picture writings which deal with agricultural activities, or religious and economic affairs. The picture of the bee occurs time and time again in these picture writings, but whether the ancent Egyptians were interested in the life history of this useful insect, we do not know. But this seems certain that the Egyptian bee, a rather nervous and cross strain, is the progenitor of a number of other races, as the Holy Lands, the Cyprians, and .....the gentle Italian of Ligurian Bee.

Palestine, the land "flowing with milk and honey" promised to the Israelites, must have been a veritable bee paradise, and beekeeping certainly was practiced there long before the Israelites left Egypt. Holy Scripture is full of references to bees and honey. Runaway swarms took possession of clefts in rocks, caves in the mountains, hollow olive trees, and even holes in the ground. Who does not remember the swarm of bees that built comb in the carcass of a lion killed by Samson, whence he derived the riddle proposed to his wedding guests: "Out of the eater came forth meat, and out of the strong came forth sweetness?" Witness the dramatic episode of Jonathan, King Saul's son, violating the fast ordered by the King, by dipping the shaft of his lance into a honey comb in a hollow of the ground during the battle, and nearly losing his life on account of his liking for honey.

Among the Orientals, too, of those distant days we find numerous evidences of the high esteem in which bees were held. Bees were found on coins of Ephesus in Asia Minor and of many other cities of Asia; images of bees appear on the famous statue of the Diana of the Ephesians; the priestesses of this

goddess were called Melissae (honey bees) and the high priest Essen (king bee). Science also was busy: Pappus, a mathematician, seems to have been the first to discuss in his work on Plane and Solid Geometry the problem of the hexagonal cell, and asserts with great ardor that the bees have solved the problem of producing a container which would be the closest possible approach to a vessel having the greatest content under given boundaries. The bees, he says, could not use circular cells (which would be the ideal), for these would show spaces between contiguous cells which soon would be filled with foreign matter, or would have to be filled with wax, thus creating on the one hand waste of space, and on the other a waste of precious material. This man lived at Alexandria at the time of Aristotle, the great philospher and naturalist, about 379 B. C. Aristotle, who by the way was the teacher of the youthful Alexander the Great, was an entomologist, and wrote extensively on insects, paying particular attention to bees and their biology. But, although he seems to have been remarkably well informed on the subject, he, in common with all the ancients—with one exception, and that only a probable one—never solved the riddle of the generation of bees. They all held that bees raised their young from a kind of seed which either fell from the stars, or was caused by a condensation of the air, and fell like dew scattered over the fields, where the older bees picked up the seeds with their mouths, carried them into the hives, and placed them into cells. Of course, they had no movable frame hives, and Aristotle probably could make his studies only from such parts of brood combs which he removed from the hive. But neither did they have microscopes, and could not imagine that those white seeds they saw in the cells, were in reality bee eggs, and even if they had recognized them as such, still, the puzzle would have remained where did these eggs come from? They knew that the common worker was sexless and could not produce an offspring. In fact, as late as 400 A. D., Saint Augustine, Bishop of Hippo in Northern Africa, wrote: "there are other living beings in which there is no male or female sex as in bees, for instance," and again asserts that common belief of the Ancients "certainly bees do not conceive the seeds of their offspring by mating, but gather them with their mouths where they find them scattered through the fields." That one large bee they saw in each hive, they held to be a ruler or king—and we know that this "king bee" still haunts the speech of ignorant people. But the Ancients knew drones, only as a useless kind of bee, and could not recognize their place in the scheme of creation. And now we come to some astonishing facts.

The ancient Greeks already used drone traps to get rid of these "useless" bees. Aristotle describes them as "a net which keeps the large bees out, but permits the small bees to pass through." And just in passing, he tells us that beekeepers often cut out drone cells from the combs, in order to limit the rearing of these useless bees which "whirl round in the air in a gymnastic exercise, and then return to the hive and eat ravenously." Since we mentioned drone traps, let us see what other implements the ancient beekeeper had to work with. First, the hive itself. In Egypt, as we have seen, it was made of clay pipes; the Greeks, however, had also a hive made of wicker work, circular like a skep, or in box shape, daubed with clay or cow manure, and if you wish to see that kind of hive still in use, go to Sicily, where descendants of the ancient Greek colonists live. This hive, also, used by the Romans, was what we might call a tunnel hive, consisting of two parts, both being connected by a narrow passage way through which the workers would pass from the brood nest in front to the storage chamber in the rear which contained their honey combs. The shape, at least internally, was that of two pyramids laid on their sides, and connected by their tops. The Greeks had also already invented a removable cover so that they could open the hive and look into it from above. Although they had no movable frames, they had removable combs, which they obtained by placing from 12 to 14 bars across the top of the hive chamber to which the bees attached their combs. In order to effect the building of straight combs, these top bars were to be placed close together. May we not wonder, perhaps, whether they provided some kind of starters for the bees to induce them to build along these bars, and not across them. Of course, the bees attached the ends of the combs to the sides of the hive, but the ancient beekeeper had a kind of hive tool, consisting of a long, two-edged knife, with a sharp curve at the end, which was used for cutting the combs loose from the sides or from the bottom, and thus the combs could be lifted out and inspected, of course, after prying them

loose from where the bees had fastened down the top bars with propolis. Uncapping knife? Of course, they had it, only it looked something like the section uncapping knife in Root's catalog, with the edge opposite to the handle like a wide chisel. They even had an observation hive, as recorded by the Roman writer on Natural History, Pliny the Elder, who tells us of one of his friends, a Roman consul, having a hive with windows covered with thin sheets of mica, through which he studied his bees. Glass, although not unknown at that time, had not yet been made into sheets. How about honey extractors? No, this is an achievement of our time, and the ancients could not boast of it. They either let the honey drip from the uncapped cells in a warm room—and that was the most costly and most desirable quality—or employed the same method as the Egyptians, pressing and straining the honey from the combs by the "bag and twisting stick" method of honey press. Wax they rendered and produced in large quantities, using a wax press and boiling water for the purpose. There were a great number of varieties of wax. It was high-priced, and formed the chief article of commerce of many provinces. The little island of Corsica, for instance, had to pay a tax of 100,000 lbs. of wax after the Romans conquered it and two years later this tax was doubled. Beeswax was used extensively by the Ancients for making writing tablets, in medicine, for embalming the dead, for making dolls and statues, and for making paints the freshness of which astonishes us when we see them today after they have lain buried in the ashes of Pompeii and Herculanum for nearly 2000 years. Wax was also used—similarily as we use paraffin to exclude the air from preserves—to seal up the openings of wine jugs. In fact, there were so many uses for wax that it would take up too much space to mention them all. Let us only mention the fact that the Jews used wax candles in the temple at Jerusalem, and the Greeks in the celebration of the Eleusinian Mysteries, and that at the feast of Adonis the Greek women offered most natural-looking gifts of fruits and animals modeled from wax, in their natural colors, for they knew how to color wax, a very difficult process even today. Of course, having once found out that bees could be controlled by smoke when honey and wax were being taken from the hive, the invention of the bee smoker was inevitable. An earthenware pot, with a narrow slit on one side through which the smoke would pass and a larger opening opposite through which the beekeeper would gently blow, and presto: the bee smoker. In winter these practical beekeepers built windbreaks and packed their hives somewhat in the manner of our tar paper method. They also provided a kind of "Hill's device"—do you older beekeepers remember it—to give the bees a passage way over the tops of the combs during the cold season. To prevent swarming, they clipped the "Ruler's" wings, and practiced requeening. To catch swarms, they used a basket on a pole, with this difference that they allowed the bees to go up into the basket, holding it over the swarm, and making it attractive by rubbing it with sweet-smelling herbs, and honey. The Romans, who undoubtedly learned their beekeeping from the Greeks, used practically the same implements, and also the same tunnel hives, but later about the time of Virgil—and lest I forget it, Virgil was not only a poet, but also a practical beekeeper—they had adopted the square wooden hive, invented by the Orientals and mentioned by Democritus the Elder (about 500 B. C.) with removable cover and a door in the rear. And it was the practical Romans who first began to establish commercial apiaries, owned by rich patricians who employed a mellarius, a slave well versed in beekeeping methods, who was bought very often for a large sum, and who had to take the stings as his pay. And almost immedately there sprung up a large number of writers on the art of beekeeping, such as Varro (116—27 B. C.) in Italy. Columella (about 60 A. D.) in Spain, Palladius, Aelian, a native Greek living in Rome, Nicander of Colophon in Asia Minor, and a host of others, and their books—inconsistencies and odd ideas due to their false systems of religion and philosophy taken into consideration—read almost like a modern manual of bee management and honey production.

Taken all in all, the Ancients knew much more about bees and beekeeping than we should expect, and it is really wonderful what results they achieved by their crude methods—crude as we see them, but quite progressive considering their handicaps. After all, what progress have we made since those days? All they had done and learned, was lost in the Migration of Nations, that destructive disaster which destroyed Roman and Greek culture, and beekeeping

returned to the stage of its infancy again, until quite recent times. Now, we know all they knew and much more about the life, the life-history, and the work of the bee; we have the honey extractor, we have movable combs, we have comb foundation, but after all is said and done, the bee has remained the same interesting insect and the beekeeper has remained the same. We are still looking for the ideal bee, and the nonpareil beekeeper. There were good, bad, and indifferent bees, and as many good, bad, and indifferent beekeepers then as there are today. Methods have not changed much since the days of Virgil, and as long as bees will gather nectar from the blossoms, store it in combs and provide a surplus, man will do today as he did in the days long past; he will keep bees, rob them of their treasures and suffer the incidental punishment.

And now a word about the American Honey Institute, I am afraid I have been a little thoughtless about this agency for promoting the sales of honey. Recently I have had some correspondence with Mr. D. D. Stover of the Stover Apiaries, whose ad is in this issue of the Pennsylvania Beekeeper. In my last letter I made the remark that the Institute had not made much impression on the honey situation in Pennsylvania, as I had the bulk of my crop on my hands. I will admit that it was a selfish view to take, but one which one would take under the circumstances. But, well I am going to let Mr. Stover on the air himself for a minute. Mr. Stover:

Now, in regard to the Institute, you know the conditions with you better than I do and I am going to try to tell you that you are mistaken about the conditions there. But what I believe I can prove to you is that we are getting a world of publicity for a mighty little money. You know that a page space in some of our publications would cost twice as much as it would cost to run the Institute a whole year. Do you believe it would be possible to write a half page ad in any publication one time that would put over 1,000 articles in newspapers in a single month mentioning honey? In addition to that the air time devoted to honey during National Honey Week was estimated at $10,000.00. I don't think that we ought to ask for anything burdensome for the Institute but I do believe that the beekeepers could afford to contribute ten to twenty thousand dollars a year in an honest endeavor to tell the world about honey as a food.

Heretofore, honey has been used, you might say, only as a spread. Now the food companies are beginning to tell the people to use honey with their products. Some people did not like it as a spread but they like bread sweetened with it. It is just astonishing how many ways honey can be used. The Kellogg Company have workers all over the country, telling the people to use honey in various ways with their products. General Mills and Pabst Corporation are doing the same. Miss Snapper, of the Pabst Corporation, prepared for the banquet at St. Louis prunes by pitting them, putting some honey in and then filling the pit up with Pabstette. They were delicious. If these food companies are willing to co-operate in the manner in which they are and we are able to get this much publicity through the efforts of two little women, I feel like the beekeepers ought to support them and that loyally. If everyone would do his bit it would not be burdensome on anyone, but someone has got to do more than their part until we can get a sufficient number interested.

Another thing is, do not expect too much of the Institute workers. It would be a miracle if in this short a time they could accomplish any benefit that was noticeable.

Our crop is pretty well cleaned up. We have been carrying an awful surplus. The bakers have consumed an awful large amount, and it was the Institute that carried the message to them. We want your good will, if we can't have your contribution. Personally I feel that we beekeepers must do something to help ourselves. Just what we can do, I do not know. Using what little intelligence I have I can conceive of no other plan by which we could get so much publicity for so small amount of money. The Institute may not be the best means, but it is the best means that the promoters know and there is just one question I wish you would ask people who are knocking the Institute, and that is what are they doing to promote the sale of honey?

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THE FARM SHOW

With the limited crop of honey harvested this season some difficulty will be encountered in selecting an attractive display of honey for the Farm Show in January. All those beekeepers who have honey of good quality should make a special effort to select their best honey now and set it aside for the show. We can not afford to let our display at the show deteriorate or drop below the excellent standards established last winter.

The classes and premiums will be about the same this year as they were last. Catalogues will soon be sent out giving full information regarding the different classes.

Comb honey for show purposes should be wrapped in cellophane. The cellophane should be plain without any coloring or at least the back of the wrapper should be entirely clear so that the judge can see the comb without removing the wrapper. Comb honey does not look attractive on display in cardboard cartons. When sections are placed in this type of a container very little honey is visible and besides the judge must remove the sections from the cartons in order to judge them. It is often difficult to remove the sections especially when a little honey has been spilled and the parts of the carton are stuck together.

Extracted honey shows best in a smooth glass container with as little depth to the jar as possible. To place high, the honey should be clear, thick or of high density, and should be free from any particles or foam. If the liquid honey tastes burnt or shows signs of crystallization it will not win a prize.

The State Farm Show will be held during the week of January 15th. Lets make it the biggest and best ever.

NATIONAL HONEY WEEK

There are many ways by which honey can be advertised, but few of us take the time necessary to push our product to the front. National Honey Week should serve as a stimulus for activity in this direction during the week of November 13th to 18th.

If each large beekeeper in the State would do but two things during this week a great deal could be accomplished in the way of advertising honey. These two things are:

1. Place a one-frame glass hive of bees in a store window or on a counter along with a large and attractive display of honey. There are few things which attract the interest of the public as do live bees. The bees will attract the attention of those who pass by while the display of honey will suggest and encourage a sale.

2. Give an interesting talk about bees and their habits to some public group, such as a biology class, a service club, or a church group. Several exhibits should be taken along to strengthen the talk. They should include a frame of bees in a glass hive, a few samples of the different colors of honey, some combs partly drawn and anything else which may seem of interest.

A personal appearance before a group not only advertises honey but also advertises the person making the talk.

A large part of the public is both suspicious of the purity of honey and ignorant of its variable qualities. The type of advertising followed during National Honey Week should aim to remedy these weaknesses in the marketing program for honey. A display of different colors and flavors of honey would help a lot to remedy that public attitude which results in the often repeated remark "This honey looks and tastes different. I don't believe its pure honey." The name of flower from which the honey is gathered should accompany the display so that the observer realizes that different flowers yield different colors and flavors of honey.

An extracting demonstration at the fair or in a store would help considerably to dispel the rather prevalent belief that extracted honey is a manufactured product.

A display of crystallized honey should accompany any display of liquid honey. Directions should be given also for liquifying the crystallized honey should the customer wish to do so. The display of crystallized honey helps a lot to teach the public that crystallized honey is a natural product of the apiary and not spoiled honey or honey containing sugar.

Any advertising program to be successful should strike at the present weaknesses in the scheme for marketing honey.

AMERICAN HONEY INSTITUTE OFFERS MATERIAL

A new leaflet of honey recipes is now available from the American Honey Institute. This leaflet is printed in colors so as to make it more attractive. The prices for it are 100 for 60 cents, 500 for $2.30, 1000 for $4.15. Address the American Honey Institute 417 N. Few Street, Madison, Wisconsin. A sample will be sent upon request. The Institute is doing all that its limited funds will permit to make National Honey Week a success.

It deserves assistance especially since this is the only effort being made to advertise honey without reference to a particular brand. The Institute may have National Honey Week stickers for sale at a later date.

STANDARD AND CONTAINERS

The types of containers in which honey is sold are many. The weights of the net contents of these containers include every possible weight in ounces from the small 3 ounce jar to one holding 24 ounces. In addition there are various sizes of containers between the 24 ounce and the 10 pound pail. The variety of shapes found in bottles used for honey is even greater. They vary from the tall slim type to the low round type. Among this jumble of containers at least one seems to have been selected as a standard for weights and shape. Many factors have had their effect in the selection of this particular jar.

Honey has several characteristics which must be considered before a suitable jar can be selected. Honey looks darker in larger quantities so that a slight increase in the depth of a container makes the honey look considerably darker. For this reason, there has been a persistent tendency on the part of the younger beekeepers to select a tall jar with as little depth as possible. The selection of

a tall jar would be justified if it were not for other more serious faults which discourage the use of a tall style of jar.

Certain types of panels on a jar have a tendency to make the honey look cloudy or darker in color. When the angles of the panel come between the observer and the light they deflect the light so as to darken the appearance of the honey over a part of the container. Any panel, however, which exposes a relatively large flat surface favors the display of honey since it permits the light to pass more freely through the jar and honey.

When liquid honey is bottled air bubbles rise to the top. These bubbles will be caught and retained by any obstruction, such as an offset in the jar. The bubbles may then give the consumer the false impression that the honey is dirty. This difficulty can be easily eliminated by using a straight sided jar. When crystallized honey is liquified and bottled both carbon dioxide and air bubbles may be present to rise to the top and leave a scum which is sufficiently objectionable in appearance to prevent the use of any containers except those which have a straight or nearly straight side.

Honey is often served on the table in the container in which it is purchased especially when small quantities are used. Any container to be satisfactory should have a wide bottom so that it is not easily tipped over. It is a rather unpleasant job to clean up spilled honey during a meal. A large mouth or opening is also a desirable feature in a honey jar. The mouth should be large so that a spoon can be used easily. A deep jar may give the spoon an opportunity to drown so that the honey can not be conveniently used again until the spoon has been rescued and cleaned.

The one jar which seems to deserve the name standard is the low round straight sided jar containing one pounl. A little variation in the size of this jar as produced by different manufacturers is not objectionable. This low style jar shows the honey to a slight disadvantage since the honey looks a little dark due to the greater depth of the jar. This fault if it may be considered such is over-balanced by the points in its favor. It is not easily tipped and is convenient for the use of a spoon. This jar is commonly used in two sizes, the eight and sixteen ounce sizes.

Other sizes are used and may be desirable for a special trade such as individual service in a hotel. The eight and sixteen ounce sizes, however, have become standard for general trade, such as the stores and roadside markets. There is no need for the great variation in sizes of containers now offered the public. Such a variation may cause a general lack of confidence in our product.

There are certain times when a fancy jar may be desired. When honey is to be shown at a fair a tall slim jar will show off the honey to greater advantage or a beekeeper may wish to add a novelty to his store exhibit in the way of some new or modernistic style of jar. This variation to be used as a means of drawing attention to his product and thereby serving as a means of advertising the honey. These new creations should not replace the standard jar but should be considered only as a temporary addition. The standard containers should be carried in stock at all times. Other larger sizes of containers which have become standard are the 2 1-2 pound, 5 pound, 10 pound and 60 pound tin containers. The largest size is used mostly for shipping in quantity, but is occasionally bought for home use because of the relatively cheaper price of the honey in the larger container.

A lithographed tin is much more attractive than the plain tin with a paper label. The lithographed pail also has some value in advertising honey after the container is empty.

The beekeepers over the state should work towards standard sizes and styles of containers so that numerous shapes and sizes of containers are not offered for sale in any one community.

BEESWAX ITS USES AND PROPERTIES

Beeswax has a wide range of uses varying from insulating material for large power companies to foundations for the beekeepers. Many of its special uses are in the field of science. One use is in the manufacture of large lenses for telescopes. Its use in this field can be described briefly.

After a lense for a telescope is ground to the right shape it is ready to be

polished. A sheet of foundation called H. C. F. (honey comb foundation) is placed on the concave surface of a large piece of glass called the polishing block or mirror. The polishing material or polishing rouge composed largely of finely powered ferrie oxide is placed on the beeswax and the surface of the lense is polished by rotating the block. The beeswax holds the rouge in place so as to give the desired effect on the lense.

Beeswax is also used in repairing fenders and automobile bodies. Several layers of folded woolen cloth are soaked in beeswax. After the fender has been hammered into place the uneven areas are smoothed over with a soldering compound. The solder is heated carefully with a blow torch until the metal flows easily. The liquid metal is then smoothed over with the pad of wool and beeswax. The beeswax is of special value for this purpose since it has a fairly high melting point and also acts as a flux.

Beeswax is often used as a soldering flux. Melt some beeswax so it will drop on the surface where the solder is to be applied, then apply the solder in the usual manner.

Beeswax has been used for many centuries for making different kinds of etching-grounds. The copper, brass, or zinc plate to be etched is protected by painting or immersing the plate in an etching-ground. The material protecting the surface of the metal is cut through with a sharp instrument or style. A written message or a drawing are inscribed in this way on the surface of the metal plate. The plate is then exposed to an acid which burns out the metal where the etching-ground has been cut through. The etching-ground is then removed from the plate and ink is worked into the grooves cut by the acid. The plate is then pressed on a paper so as to leave the written message or drawing on the paper.

Several formulas for etching-grounds are as follows:

No. 1—Wax 2 parts; Asphalt 1 part; Mastic 1 part.

No 2—Wax 4 parts; Asphalt 4 parts; Pitch 1 part.

No. 3—For relief etching: Wax 100 parts; Asphalt 100 parts; Rosin 100 parts. Dissolve in turpentine oil 610 parts.

Where natural properties are of value beeswax and honey are always desirable. In making face and toilet creams beeswax is used extensively. Several formulas of common toilet creams are as follows:

No. 1—White beeswax 1-4 ounce; Spermaceti 2 1-2 ounces; Oil of sweet almond 2 1-2 ounces.

Melt over a fire then remove from fire and add rose water 1 1-2 ounces. Beat until creamy, then stop. Do not beat when cool or the rose water will separate from the cream.

No. 2—White beeswax 6 ounces; Tallow 3 ounces; Spermaceti 2 ounces; Oil of sweet almond 6 ounces.

Melt together, stir and add while hot 1 ounce of sodium carbonate dissolved in 79 ounces of hot water. Perfume as desired.

No. 3—Almond oil 2 ounces; Spermaceti 1-2 ounce; Beeswax 1-2 ounce; Honey 1-2 ounce.

Melt and stir together the above. then add slowly while stirring 1 1-2 liquid ounces of lemon juice and 1-4 liquid ounce of Bay Rum. Do not beat after mixture is cool.

REVIEW OF THE SEASON

In so far as the production of light comb honey is concerned, this season has been one of the poorest seasons on record. Practically no light comb honey was obtained from locust, alsike clover, basswood or sweet clover and what little was obtained from these sources was darker in color than that gathered last year. One beekeeper, Mr. Fisher, of Carlisle, reports a fair crop of light honey from clover. Light comb honey is scarce in other parts of the country, also, so that the price of this product has gone up rather rapidly.

In a number of counties in north-central and northwestern Pennsylvania there has been a heavy flow from buckwheat, wild aster, and golden rod. Because of the heavy flow the color of this honey is unusually light being a golden-yellow nearly as light as clover.

The flavor of this honey is also extra fine this season. Fall honey from Northern Pennsylvania generally has a good flavor. The flavor of this fall

honey is improved when the honey is crystallized with a fine texture crystal. It is natural for this honey to crystallize quickly when extracted and to crystallize almost as smoothly as processed honey

There is a sufficient surplus of honey in North Central and Northwestern Pennsylvania to permit the shipping of a considerable quantity to other sections of the state.

The buckwheat honey crop is a little above average for the State. The members of the Buckwheat Honey Pool are getting a considerably better price for buckwheat honey than they did last year. Last year the net price received by members dropped as low as three and a half cents a pound. This year the price has gone up to six and a half cents.

Considerable quantities of honeydew were harvested in scattered locations throughout the central part of the State. In that area honeydew makes up the only surplus obtained by many beekeepers.

A good many colonies in the southern half of the State are short of food. The brood chambers are nearly empty in many of the colonies run for extracted. Feeding will have to be done to provide these colonies with sufficient food for winter. The quality of honey stored for winter is also rather poor so that feeding will be advisable as a preventive against dysentery.

The price of honey over the State as a whole is above that of last year.

JUST NEWS

During the most favorable period of two weeks this summer, The Serve Yourself market owned by the Beavers at Troy disposed of $20.00 worth of honey.

Mr. A. C. Trainer, of Schnecksville, has a new outfit for heating and cooling honey. The honey does not stop from the time it leaves the extractor until it is heated to 145 degrees F. cooled to 100 degrees F. and strained all ready for the cans or bottles. The honey is heated as it passes between a series of baffles above a steam chamber. It is cooled above a corrugated iron pan with cold water flowing underneath. In the process of being strained it passes through a 96 mesh wire screen.

Reverend M. G. Hepner attended the summer picnic of the New York State Beekeepers at Canandaigua Lake.

Several beekeepers of the state are building dry chambers in which to heat and liquify honey. The chambers are built of wood and are insulated with celotex. They are heated with steam, hot water, or direct heat from oil or gas. Bottles of honey may be heated in these chambers without the loss of the labels. As soon as he honey becomes clear the containers are removed from the dry chamber so the honey can cool at once. This type chamber also permits the heating of honey in 60 pound cans without damage to the tin due to water. Several of those who own dry chambers are Floyd Sandt, Easton, Warren Malick, Pottsville, and A. C. Trainer, Schnecksville.

Several beekeepers lost their bees during the heavy flood of August, at least two apiaries were washed away in York County.

This is the first season for some years that a surplus was obtained from wild red raspberry and mountain honeysuckle. A surplus from these flowers may be obtained in limited areas between Sullivan and Forest Counties. The surplus from this source is gathered during May and early June. During the past season it amounted to as much as 70 pounds for strong colonies.

A few of our brethern have gone to see the Exposition at Chicago. None of them are willing to admit that they walked the "Streets of Paris."

Allen Fleming. of Corsica. reported a gain of 13 pounds from one colony in one day from goldenrod and wild aster.

Merrill Brothers, of Muncy, obtained some honeydew this summer which

contains the rare sugar melezitose. Honeydew containing this sugar apparently finds a ready market. The sugar is used for scientific purposes.

Mr. William H. Ernshaw, of Bridgeport, Pa., has had a very discouraging experience during the hurricane of August 24th. He reports a rise in the river at that place of twenty-five feet, and as his bees were located in the low land, he lost most of his colonies by drowning, due to the rapid rise of the river. A friend of his took him out in a boat and they rescued about twenty per cent of them altho the queens were all drowned, he therefor sent for queens to requeen the colonies he was able to salvage. He says that he burned all the brood that was water soaked and himself and man worked a week to clean up the mess as mud settled over every thing. The combs were filled with muddy water and these had to be cleaned out where he wished to use them in the hives again.

Luckily, Mr. Ernshaw had just taken off his honey crop a few days before.

BEEKEEPING IN BUCKS COUNTY

By A. Hugo Sterz

William Penn, while sojourning at his country home at Penn Valley had a longing for some honey and had to send his order to Philadelphia. Bucks County did not seem to have beekeepers. Beekeeping spread later on and now we have quite a number of experienced beekeepers.

A few weeks ago I called on Prof. Henry Schmieder, teacher in beeculture at the National Farm School near Doylestown, to add to my knowledge of beekeeping in Bucks County. He had just returned from a visit to Canada and told me of the wonderful crop our northern neighbors get from their package bees. No such luck for us.

Bucks County may be divided roughly in two parts regarding beekeeping, the dairy country around Doylestown and that part bordering the Delaware.

Four years ago Doylestown had a fine crop of clover honey, but weather conditions have prevented another one. White aster and goldenrod helped to furnish a crop, but the prolonged rains curtailed even this last resource.

Along the Delaware we have to depend mostly on goldenrod and white aster. The Japanese beetle played havoc with smartweed this summer. Last year we had a good flow from wild carrot, but not this year. Spanish needle is spreading now. Spanish needle is certainly a fine honey plant. It grows in swampy, heavy soil and furnishes a light amber honey. I intend to help "Dame Nature" with some collected seed from Mercer County, N. J. Last year I harvested some honey from some unknown source through a special well provided hive. And this year the crop increased, but some unforeseen circumstances prevented me from taking full advantage of the flow. Luckily I did not take it off the hives, otherwise I had to resort to feeding. The rainy spells will spoil other hopes from white aster and goldenrod. The beekeeper is always an optimist so let us look for another better year.

FLOODS IN DELAWARE COUNTY RUIN MARIGOLD HONEY FLOW

By H. O. Wilcox

The marsh marigold crop in Delaware County, usually one of the most dependable sources of nectar, has been severely injured by flood waters during 1933. The swamps where this flower grows were inundated early this spring when the dykes gave way along Darby Creek and the Delaware River bordering Tinicum Island.

The marshy areas where the flowers usually grow in great abundance have been under one to four feet of water since March. and as a result, the marigold plants in those flooded parts have been practically wiped out. A few acres of marigolds grew in higher places and along the edges of the swamps, but nothing like the quantity in 1932. The outlook was so unpromising that only two or three beekeepers moved their bees to the marigold section. One of those who did move their bees was Dr. C. B. Shortlidge, of Lima, an old-time beekeeper of ths section.

On August 23d, the high tide which accompanied the tropical storm raised the waters of the Delaware River and Darby Creek, and all the bees were washed away from the low land on which they were located along Bow Creek. Neighboring residents commandeered a row boat and rescued a portion of them, but it was estmated that nearly one-half the bees were lost although practically all the hives were recovered. The loss of the bees will probably offset considerably any gain which was made by moving them.

Honey flow conditions have not been satisfactory in Delaware County this fall. In addition to the failure of the marsh marigold, adverse weather conditions have kept the bees from working and very little, if any, surplus honey has been stored up to the present time. However, the wild aster is just coming into bloom, and if the weather conditions clear up, we will probably get some honey from this source.

LEHIGH COUNTY NOTES

By Mrs. H. W. Dennis

The Lehigh Valley Beekeepers Association to date had an interesting season. Business, social and field meetings were held and the spirit of cooperation prevailed. A meeting always looked forward to is the one held in the apiary of Mr. Floyd Sandt, Wagner Orchards, above Easton, Pennsylvania. July 15th was the date this year and the meeting was attended by fifty-five beekeepers. Prof. E. J. Anderson, of State College, had a profitable message for all present. Mr and Mrs. E. G. Carr, of Pennington, New Jersey, were our guests. Mr. Carr also addressed the members which was much appreciated.

The all-day picnic scheduled for Saturday, September 16th, Trexler Apiary, turned out to be a half-day outing of much interest. The heavy rain of Friday and Saturday forenoon no doubt kept some of the beekeepers away. The skies cleared at noon (Saturday) and Mr. Trainer, manager of the Trexler Apiaries, and our congenial host, took the party to see the big cider press in operation, also, the apple butter plant and then on a tour through the noted Trexler Game Preserve. It was a rare treat, the scenery was wonderful. We saw herds of deer and buffalo, also a herd of elk which are seldom seen.

Included in the party were beekeepers and friends from Monroe, Northampton and Lehigh Counties. We were quite pleased to have them join us and hope to have them with us again in the future.

The Lehigh Valley Beekeepers Association had a display of honey and honey products at the Allentown Fair the past week.

Our members were liberal in contributing the honey and products and giving their time in helping to arrange the same, which is no small matter. We had extracted honey, comb honey, wax in various designs, cake, cookies, jellies, candy and a display of goods to make up for sandwich filling, such as raisins and nuts with honey, apricots and prunes with honey, Kelloggs cereals, cheese, crackers, carrots, peanut butter all with honey and a card with the combination on. The goods were arranged on green edged plates and green cups all covered with cellophane. For the background we had leaf green and apricot crepe paper.

A lot of work is connected with a display of this kind, but what a satisfaction it is to know that during the week a remark made by a stranger (overheard by one close by) like this: Oh my! look at the honey display. Why this is as nice as the one we saw at the Chicago Fair.

The Lehigh Valley Beekeepers own an observation hive with bees. It was placed in the center of the display and turned out to be a great attraction especially to the children.

LYCOMING COUNTY NOTES

By Harry Merrill

Well at last we come near the end of another year that has been very disappointing as far as profit is concerned as we did not get the buckwheat crop we had expected owing to severe rains. Also we had quite some rain and floods during golden-rod period, so if we do not get a flow from asters considerable feeding will have to be done

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BEES PREFER ONE KIND OF FLOWER

When the early morning sun peeps over the hills the bees within the hive begin to stir, but they do not leave until the dew is nearly gone from the grass.

A few bees go out first as scouts, they search the fields for flowers which are secreting nectar. The flowers found may be dandelions, clovers, or any one of a dozen others. The bee loads up on this nectar, then hurries back to the hive to report his find. If the nectar in the flower was abundant the bee makes a big fuss when it enters the hive. Other bees nearby judge the amount of honey in the blossoms by the amount of excitement caused by the returning bee. Those nearby detect the odor of the nectar brought in, then they in turn fly to the fields and hunt for the same flowers.

When the flowers are found the bee continues to work those flowers as long as they secrete nectar freely. The bee does not go from one variety of flower to another, but continues to work the variety on which it began.

If a tiny drop of paint is placed on the back of a bee this bee will be seen to return time and again to nearly the same place in the field and work one variety of flowers. It can be observed that a single bee will show a preference for only one color of sweet clover bloom.

When the nectar is brought back to the hive it is very thin, but finally after about four days of fanning and ripening the nectar is condensed so as to contain only 18 per cent water.

The honey produced from each of many flowers varies in color from a dark brown to a water white. Each kind of honey has a flavor all its own. There are produced in Pennsylvania at least fifty different colors and flavors of honey. Some of the finest flavors of honey are clover, locust, raspberry and apple.

The purity of honey, its flavor and the quality is characteristic only of natural foods.

THE BIG PICNIC

The annual summer meeting and picnic of the Pennsylvania State Beekeepers Association was held on August 26th in the McHenry Grove, Stillwater, Pa.

A representative crowd from the eastern part of the State was present—about 150 in number. Our genial hosts, Messrs. A. B. McHenry and son, John, together with their good wives, did things just right in making us all comfortable and at home.

The program began in the forenoon with a motorcade visit to several of the McHenry yards. The McHenrys, like most of us, were short on clover honey, the bees however were working on buckwheat and we hope stored a good crop.

Before luncheon there was a series of snapshot speeches by Prof. Anderson, of State College, Harry B. Kirk, State Apiary Adviser, Harry W. Beaver, of Troy, Harry Merrill, of Muncy, and others.

After luncheon the smoker contest drew a great deal of attention, the contestants, a dozen in all, each had their favorite fuel and were given a minute

to start the fire, then a rest of fifteen minutes, then twelve puffs of the bellows and the one giving the best smoke won a new smoker, which was won by A. C. Trainer, of Schencksville, using sumac bobs for fuel. Then five minutes of puffing to the test durability of fuel was won by Frederick Hahman, of Altoona, using bark as fuel, this prize was a hive tool.

Then followed games led by Prof. Anderson, which were greatly enjoyed by old and young. The day was ended by a demonstration of drumming bees out of a foul brood chamber colony. After which we wended our several ways toward home feeling that the day had been well spent with new friendships formed and old ones renewed.—H. W. B.

WONDER DRINK

1 glass hot water; 1 teaspoon honey; juice of half a lemon.

A glass on retiring gives you relaxation and you sleep like a child. Take it before each meal. It gives your liver action, it rejuvenates you, gives you pep. Keep drinking this for a month and you will be a new person.

BRADFORD COUNTY NOTES

By Harry W. Beaver

The season of 1933 has drawn to a close as far as honey gathering in Bradford County is concerned. This has been a very disappointing season in a way. First we had a good flow from fruit bloom, enough to put the colonies in first class condition for clover, and then the clover flow faded into oblivion. Then the buckwheat flow started in a big way only to fade into a fair flow from goldenrod which filled the broodnests for winter and a little to augment the surplus crop from buckwheat.

We have about finished extracting the smallest crop of honey we have produced since we came to Bradford County, a matter of twenty-nine years.

We have worked a new plan for the eradication of American foul brood by shaking entire yards where there is a majority of the hives showing signs of the disease. We also have quit experimenting with disinfectants and melt the combs into wax and use nothing but foundation in the shaken yards, also burn out the hives. We hope in this way in time to eradicate the disease insofar as our own apiaries are concerned. The only danger of reinfection will then be in robbing out some of the neighbor's bees. We hope however to have another inspection next season which will, we hope, lessen the danger.

Our hives seem to be well filled with both bees and honey for winter.

The honey, although partly goldenrod, is well ripened so that we do not anticipate any danger of dysentery. We seem to be in a cold section and bees as a rule seldom fly more than two or three times during the winter, but with the packing we give they they do not seem to consume much honey and therefor do not need frequent flights.

Now a word about honey prices. Some of the uninformed small so-called beekeepers are selling at last year's low prices. Of course this is an admission in a way that their honey is not up to standard, but why not take a little pains and study the matter a little if it is worth doing at all and put up a better grade of honey and get a satisfactory price, and at the same time not kill the market for honey.

THE PENNSYLVANIA BEEKEEPER

PUBLISHED BY DIRECTION OF THE ASSOCIATION

VOL. 8 NO. 4 JANUARY, 1934

THE PENNSYLVANIA BEEKEEPER

Official organ of the Pennsylvania State Beekeepers' Association. Published Quarterly. Membership and Subscription Price inclusive $1.00

THE FARM PRODUCTS SHOW

The Farm Show at Harrisburg in January is one of the outstanding shows of its type in the country. Those who have attended during the past few years have been surprised at the size and extent of the Show. The exhibits both agricultural and commercial are the best that can be had. The programs offered at the meetings of the different societies represent the best talent available. Those who are able to go to the Show and the meetings, but do not, are certainly missing an opportunity to see an exceptionally good Farm Products Show.

The beekeepers' program for Wednesday and Thursday is excellent. There will be two speakers from outside the State; Dr. E. F. Phillips, from Cornell and Dr. C. E. Burnside from Washington, D. C. They both have topics to discuss that are of interest to all.

This meeting is also an excellent place to renew your acquaintances. We will expect a large number to be present at the Show and meetings.

THE PENNSYLVANIA BEEKEEPER

With this issue, the Pennsylvania Beekeeper will have completed its eighth year of service to the beekeepers of Pennsylvania. It has been published for seven years without a break. For all but the first two years, the publication has been issued quarterly.

The cost of this publication to our Association has been extremely small due largely to two factors. First, the low costs of printing obtained from the printer at Troy; and second, to the amount of advertising space which has been sold by the committee. In fact, the income to our Association from advertising space sold has for a number of years been greater than the income from dues.

A comparison might be made with the cost of a publication for another beekeepers association. The printing cost of the 1932 Annual Report by the State for the Illinois State Beekeeper's Association was $632.00 without labor or postage. The Pennsylvania Beekeeper cost our Association only $85.00 for 1932 and this figure includes postage.

The number of active members in the Illinois State Beekeepers Association was about 772 for the year 1932. Our Association has less than 150 paid up members. Surely our beekeepers can show a greater interest in their State Association.

Even though the membership of our association is very small, the cost of publishing the Pennsylvania Beekeeper has been kept relatively low. It is

certainly to the credit of the Publishing Committee that the cost of the Pennsylvania Beekeeper to our Association for 1932 was less than half the normal income of the Association for that year. There are very few associations that can equal this achievement.

During 1932 there were fifty contributions or articles included in the thirty-four pages of type written material. Each year the contributions becomes more representative of the different beekeeping sections of the State.

The Pennsylvania Beekeeper represents one of the few progressive steps taken by our Association during the past ten years. It would be a catastrophe if this publication was given up as a result of inactivity or unjust criticism.

The cost for publishing the Pennsylvania Beekeeper remains about the same regardless of the number of members paying dues. Since this is true it should be the policy of each member to try to increase the membership of our Association.

The Editor wishes to take this opportunity to thank those who have contributed to Pennsylvania Beekeeper during 1933. It is the contributors who make any publication a success.

Organized at
Williamsport
1904

PENNSYLVANIA STATE BEEKEEPERS ASSOCIATION

1932 Officers

President
Harry B. Kirk
Harrisburg

Vice President
Harry W. Beaver
Troy

Sec'y-Treas.
Charles N. Greene
Troy

PURPOSE

Constitution, Article II. "The object of this Association shall be the promotion of scientific and practical bee culture and securing of such legislation as is necessary to protect and further the beekeeping industry."

ANNUAL MEETING

The thirtieth Annual Meeting of the Pennsylvania State Beekeepers will be held in the Farm Show Building at Harrisburg, Wednesday and Thursday, January 17-18, 1934. The morning sessions begin at ten o'clock. An excellent program has been arranged for your pleasure and profit.

Sincerely yours,

Charles N. Greene, Sec'y-Treas.

BEESWAX ITS USES AND PROPERTIES

Beeswax has a very complicated chemical formula and is very difficult to analyze. It is seldom that two chemists will analyze separate parts of the same sample of beeswax and find the same products in it. A large part of beeswax is made up of ceratic acid and myricin (myricyl palmitate). Beeswax contains also some higher fatty acids and alcohols. There are undoubtedly considerable differences in the composition of different samples of beeswax especially samples coming from different countries. The exact composition of beeswax is not very well understood.

Beeswax can be dissolved in many liquids—some of the solvents are: Turpentine, Xylene, Toluene, kerosene, gasoline, benzine and carbon tetrachloride. Beeswax is also partially soluble in hot alcohol and ether.

Beeswax mixes readily with oils, and fats (fatty acids) and rosin when the products are heated sufficiently to become liquid. Beeswax is used extensively with these ingredients to make many products some of which have already been listed in these columns.

The specific gravity of beeswax is .946 to .970 at 15 degrees centigrade. The variation in specific gravity of different samples would also indicate a variation in chemical composition.

The two following formulae for cements are taken from Henley's "Recipes, Formulas, and Processes."

1. For cementing objects to glass.
   Rosin—1 part
   Yellow wax—2 parts
   Small areas of glass cemented with this cement will not withstand very much strain. The glass should be fairly hot when cemented.

2. To cement glass to iron:
   Rosin—5 ounces
   Yellow wax—1 ounce
   Venetian red—1 ounce
   Melt the wax and rosin on a water bath and add under constant stirring the venetian red previously well dried. Stir until nearly cool so as to prevent the venetian red from settling to the bottom.

The following is a formula for a solution used for cleaning and polishing linoleum:

Yellow wax—1 part
Cornauba wax—1 part
Turpentine oil—7 parts
Benzine—4 parts.

Melt and mix the wax together, then remove from the flame or stove and mix in the turpentine and benzine. (CAUTION: Turpentine and benzine are explosive and should be kept away from open flames).

Two formulae for leather dressing are:

1. Lard—100 parts
   Castor oil—20 parts
   Yellow wax—25 parts
   White vaseline—35 parts

2. Wax—25 parts
   Olive oil—60 parts
   Oil of turpentine—30 parts

BEES FOR POLLINATION

A new publication was issued in June at Cornell University. It is entitled "The Comparative Value of Different Colonies of Bees for Fruit Pollination." The work was done by A. W. Woodrow.

Two paragraphs can well be taken from this publication to be included in the Pennsylvania Beekeeper. The first reads as follows:

"From the work here reported, it is evident that the package bees failed to send out as many bees as did colonies of equal strength established on their own combs. While the number of packages studied is small, the results for all packages are so consistent that it strengthens the conclusion that package bees are not so useful for pollination work as are established colonies. This conclusion is well supported also by the experience of fruit growers and others who have used package bees for early spring work."

The second, "It is noticable here that, until a temperature of 72 to 74 degrees is reached, the flight of the weaker colony lags far behind that of the stronger, whereas at the higher temperatures the weak colony sent out as many bees or more, in proportion to its strength, as did the stronger colony."

JUST NEWS

Mr. McNoughton, of Perry County, observed a rather unusual condition in his apiary this summer. His bees gathered honeydew containing Melezitose from the pines. The sugars in this honeydew crystallized quickly. The bees were unable to use the hard crystals and soon carried them out and dumped them in front of the hives, then during the night the dew and rain dissolved these crystals. The next morning the bees gathered the solution and carried it into the hives again. This solution of sugar in front of the hives started robbing each morning so that the apiary was kept in an uproar most of the summer.

The writer was very much surprised when examining some bees in Elk County during the last of November to find fairly large quantities of thin honey in the combs. When the combs were turned sidewise the honey dropped out slowly of its own accord. It would seem that this thin and unripe honey would cause considerable trouble during winter. It is difficult to understand why the bees had been unable to ripen the honey after it was gathered.

Cameron was one of the few counties in which a large crop of honey was harvested during the past season. The 4-H Club boys and girls in that county averaged 148 pounds per colony.

The beekeepers in the northwestern part of the state will be interested to know that a good many reports have come in regarding damage to the Prickley Ash or Devils Club. When winter comes and food is a little scarce the deer strip off and eat the bark from the lower five feet of the Devils Club stalk. This type of damage is a real help to the beekeeper since the Devils Club produces a honey entirely too bitter for table use.

Allegheny County held a very large farm products show the early part of September. The greatest attendance in one day was 150,000. Mr. Keil and other beekeepers put up a very attractive exhibit of honey for the show.

Several beekeepers were selling honey to the C. C. C. Camps. The camps have recently been able to get cheap syrup at prices from 25 to 35 cents a gallon. Honey, of course, can not compete with such prices.

Bouquets of another variety of apples were hung in buckets in the center row of trees of a solid block of York Imperial trees. Bees also were placed in the orchard. The trees on the windward side of the bouquets averaged 90 bushel per row while those on the beeward side averaged 200 bushel per row. There were nine rows of trees in this orchard in Adams county. Apparently the wind carried the bees from the bouquets giving the trees on the beeward side a much heavier set.

ALLEGHENY COUNTY NOTES AND COMMENTS

By A. T. Keil

I had an unusual experience with bees this summer. There was an empty hive at one of our bee yards from which I noticed bees going in and out. Since there were only full sheets of foundation in the hive I examined it to see what caused the bees to be going in and out of the entrance. I looked in and saw nothing but a lot of bees cleaning it out. About two days later a good sized swarm came and a lot of the bees went in the hive, but came out and left soon afterwards when left they did not go into any of my hives so I knew it was a stray swarm. The next day they came again and in trying to see where they were going my son, Elmer, noticed about a dozen bees on the ground. He also noticed a queen among them so he put the queen in the hive. Soon afterwards the swarm was busy in their new home. They built up in fine shape for winter.

If permissable in these columns, I should like to offer a few suggestions and additions for the premium list of the Pennsylvania Farm Show. One especially being the addition of a new class for Bulk Comb Honey in glass. The honey to be shown either in the one pound standard honey glass jar or in quarts.

For display purposes I prefer the one pound glass. When a nice sized piece of comb honey is put in the jar and the jar filled with extracted honey it makes a nice looking display and something people will stop to look at.

We are selling bulk comb honey in glass and we find few people care to pay five cents extra for the comb honey in pound jars. The trouble of putting it up does not justify selling at regular extracted prices. We find, however, that the market will pay the extra charge for quart jars. Ten cents extra is added for the extra trouble. By selling chunk honey we dispose of considerable quantities of sections of comb honey that are not up to standard in weight or are otherwise unsalable for fancy or first grade honey.

If premium money is not available for this class I would suggest that it be substituted for "Class 101—Crystallized Extracted Honey in pails." This is a "See what you buy, buy in glass" age. I feel that as far as the public and exhibits are concerned if they just see a tin pail it does not mean as much to them as does an attractive exhibit in glass.

I am looking forward to meeting old beekeeper friends at Farm Show in January and hope that in spite of the short crop there are twice as many exhibitors as last year.

BLAIR COUNTY NOTES

By Frederick Hahman

As far as I can ascertain, the June honey crop in Blair County was a failure. Unprecedented hot and dry weather was responsible. The clovers, our principal

nectar producers just dried up. My own bees gathered quite a crop of honeydew, ruining all the sections on the hives.

This part of our county abounds in oak trees, and when a drought occurs in June, the bees will bring in the honeydew from the oaks. This honeydew is of the color of tar and is totally unfit for sale.

September has been a remarkable month for warm nights, in fact, it holds the record over past years. The weather was most favorable for the bees, both for brood rearing and honey storing.

About the middle of the month of August, Goldenrod started to bloom more profusely than I have ever noticed. I never had much faith in goldenrod, as a nectar producing plant here, but to my surprise it did produce well. I watched the work of the bees, to see if they were gathering pollen, but found that it was the nectar they were after. The combs of the colonies soon gave evidence that such was the case.

About the first week in September, the wild asters started to bloom. From that time on the bees had a glorious harvest. The warm nights enabled the bees to ripen and seal the incoming nectar. I seldom have seen colonies with such an abundance of sealed honey in Autumn, as they have this Fall.

I constructed winter cases for the twelve colonies of increase. The cases each house two colonies, packed eight inches on sides, four inches below, and twelve inches above. I am an advocate of thorough protection for outdoor wintering with covers sealed down tight. The whole apiary is wintered that way.

I have read articles from the pen of beekeepers of high repute decrying the use of heavy packing as a detriment during early spring, for my part I feel sure that they are mistaken.

Heavily packed bees are snug and warm all winter, and they keep that way and prosper, during all of the changable weather of spring. They fly at every favorable opportunity and do not depend on sunshine to coax them out.

The winter entrance to the tunnel is only a one 3-8 inch auger hole. As the colony builds up in strength additional similar holes to the number of six are gradually opened and finally the panel containing the holes is removed entirely giving an entrance the full width of the hive. The bees are kept in the packing cases until about the middle of May.

During the latter part of January and earlier, if the weather is mild, the bees begin to drag out their dead through this one 3-8 inch hole and drop them outside. I frequently look after that one small entrance to see that none become clogged, with a dead bee, however, I have never found such to be the case.

In examining the colonies during maple bloom, when bees are carrying pollen, I find the bottom boards, clean and dry as in summer, therefore, I believe thorough packing is one of the essentials of good outdoor wintering of bees.

After the Stillwater meeting, Mr. Garvey and myself motored north as far as Watkins Glen calling on Mr. Beaver and Mr. Greene at Troy, Pennsylvania. We enjoyed seeing the buckwheat fields in full bloom. We do not have such around Altoona.

ERIE COUNTY NOTES

ERIE COUNTY BEEKEEPERS ASSOCIATION

Have you missed us from these pages? The Editor says "yes," and therefore we shall get even with him by making him do a lot of "editing."

First, a report on the conditions and the crop of the year. Well, we were in the same fix as the rest, a wonderful start, with bees building up rapidly and ready to take care of a bumper crop, and then came the drought. Some of us were fortunate enough to secure a light honey crop of 25 to 30 percent. Others got nothing, especially those who were producers of comb honey. There were a few exceptions. Light honey is just a shade or two darker, evidently due to the slowness with which it came in, but the quality is better than usual. There is not much left in the hands of producers. The Fall crop also was somewhat of a disappointment. There was plenty of Goldenrod, Asters and Buckwheat in bloom, but they all seemed to have suffered from the dry spell so that the crop did not amount to more than 60 percent of an average. All during the dry summer, bees continued to rear brood since conditions were favorable. Honey continued to dribble in just enough to prevent the queens from shutting down their egg laying, and thus bees went into winter quarters with plenty of young bees and enough stores.

Now as to our activities, we could say a whole lot. Beekeepers meetings during the past summer seem to have been better attended than ever, probably due to the fact that the beekeepers were not busy enough with their bees.

We had a wonderful summer meeting at Canandohota Lake, on August 10. We call it the Tri-County meeting, but there were at least seven counties of Northwestern Pennsylvania represented, and also guests from out of the State. We had in the neighborhood of 275 people present, and there would have been more if the weather had been more favorable. It was cloudy and damp, raining early in the morning, and drizzling most of the time, with a good heavy downpour of about ten minutes in the afternoon. Then the sun came out, and everything was fine. We had lots of fun with the games for old and young, males and females, and even the kiddies, with lots of valuable and useful prizes. There was also a practical part of interest to the beekeeper. Mr. Ernest Root, of the A. I. Root Company, Medina, Ohio, was so anxious to be there that he drove all the way, the day before, and stayed over night in Union City. He got there in time to take a picture of Father Hepner on a truck, trying to close a hive of big, bad Caucasian hybrids—Mr. Carr, take notice—which got out of the hive when the supers shifted as the truck dropped into a deep hole in the road. Some little girls tried to fight the bees which were buzzing around, and got a few bees in their hair. Then Father Hepner had the pleasant job of getting the bees back and closing the hive. Yes, he got stung, once in the finger when he inadvertently squeezed a bee, and another time when one of those shameless critters took a walk up inside his unmentionables. But, Mr. Carr, take notice: a short time after, those very Caucasian hybrids were very tame, so that they could be handled without veil or smoke, in a light rain, for the purpose of taking off honey by the Mraz method.

When the time for the morning program arrived, Father Hepner greeted the large crowd, and Professor Anderson spoke on seasonal management. The Forest County 4-H Bee Club had brought their musical instruments along, and they gave a fine concert before lunch. After lunch, there were a number of short speeches by two of the prominent beekeepers. Mr. Howard Myers, of Ransomville, New York, and Mr. Hollopeter, of Rockton, Pennsylvania. Then Father Hepner explained to the beekeepers the principles of the Mraz method. The beekeepers were seated under the rainsheds provided for such emergencies at Canadohota. There was also a demonstration of pure Caucasians, just to show how incredibly gentle these bees are. You may have seen Mr. Ernest Root's account and pictures in the October number of Gleanings. A long and spirited address was given by Mr. Ernest Root, our principal speaker, on the present condition of beekeeping. His words were certainly apt to inspire all beekeepers with new hope and courage. To top off his talk with a good laugh, Mr. Root brought out his famous bag of tricks, placing a hatful of bees on the head of a bald man. Mr. Allio, the successful leader of the Forest County 4-H Bee Club, was the victim. He stood the ordeal with great fortitude, getting his picture in the paper as a reward. The Erie Dispatch-Herald considers Beekeepers' activities important enough to send their star reporter to such gatherings. Finally we started the games which were thoroughly enjoyed by participants and spectators. And believe me, there was real competition in some of those contests. And when the dewy shades of eve began to fall, we went

home, tired but happy, in the last rays of the sun gilding the broad expanse of Lake Erie, conscious of having to our account another day well spent.

The week before, Father Hepner, in company with Mr. H. H. Root, of Medina, Ohio, attended the Summer Meeting of the New York State Beekeepers at Canandaigua Lake, N. Y., and had a very good time, meeting a number of old friends, and capturing a prize for making the shortest speech—45 seconds by the stop watch. Unheard of! Usually, you have to shut him off, for once he gets started, he does not know when to stop. He also gave an invitation to the New Yorkers to attend our meet at Canandohota, with the result that we had quite a little delegation present, among them Mr. John Adams and Mr. Howard Myers, of Adams and Myers, Ransomville, N. Y., with their families. The next day, Father Hepner went over to Niagara Falls, where the Ontario and Welland County Beekeepers held their picnic at the Larkin Farm No. 2 at Queenston, Ont., not far from the Brock Monument. I tell you, those Canadians know how to put on a picnic. We got some ideas for our next one.

The North East Community Association puts on an exhibit every year, in which North East, Harbor Creek, and Greenfield townships are participating. The beekeepers always put on a nice exhibit, but this year it was better than ever. The boys, who graduated from the North East 4-H Bee Club, are now under the leadership of Prof. R. A. Fordyce, of the North East High School Agriculture Department, and they certainly made their presence seen and appreciated. No less than 6 of them had projects in beekeeping to show, and came in for the prize money under several entries. Two brothers, Lucas by name, have begun to sprout commercial beekeepers' wings, and put on a nice educational exhibit, which also took a prize. And you should have seen these boys selling honey retail at good prices! Of course, most of their customers were ladies!

NATIONAL HONEY WEEK. For the first time, we put on a program of propaganda. Mr. C. L. Wright, of Erie, had secured the film "The Realm of the Honey Bee" from Washington, and showed this film, with accompanying lecture, in several schools in Erie, and also at the Y. M. C. A. and at the County Agent's Offices in Erie. Prof. Anderson did the same on his visit to the 4-H Bee Club, at Girard, Pa., and Father Hepner showed the film, and lectured for almost two hours to the student body and the faculty of St. Mary's College, North East, Pa. A number of prominent beekeepers with their families, and other guests being in the audience. Mr. Wright and Father Hepner put on a honey exhibit at Pulakos, the finest confectionery and restaurant in Erie, and Mr. Wright broadcast a lecture on Bees and Honey from the Erie Studio. This broadcast was published in local papers, and as a result there was much interest shown by the public.

GARDEN SPOT NEWS

By W. O. Hershey

Bees went into winter quarters in good shape due to a good aster flow at the close of the season. Quite a bit of the late fall honey is not saled but with an occasional flight the bees should avoid dysentery and come through in good shape. Brood rearing stopped earlier than usual.

The honey market continues to be very good. This may be due at least in part to the efforts of our Health Clubs and the information spread through

health talks. People are beginning to realize the necessity of taking care of their most valuable asset—health. Honey, because of its natural food values, is being recognized and used more extensively as a health sweet. We harvested a short honey crop this year and find ourselves without honey to take care of our normal trade. It looks as if it is advisable to carry over a ton or two of honey from one year to another.

A joint picnic of the York and Lancaster County Beekeepers was held at the Masonic Homes at Elizabethtown on September 1. A large part of the day was spent with games and contests. There was a queen hunting contest, a watermellon eating contest and various other games and contests. Lunch was eaten beside the beautiful artificial lake and rock garden of the home. After lunch a tour of the grounds was made. Everybody seemed to have a very pleasant time.

LEHIGH COUNTY NOTES

For National Honey Week we distributed 1,500 "Kellogg's Recipe Folders" in different localities and in connection with the National Apple Show there were five honey displays at the "Farmart," 12th and Chair Street, City. Incidentally or maybe accidentally or both I won a basket of Golden Delicious apples as a door prize at the apple show.

The following recipes should appeal to the wives of our beekeepers:

HONEY DROP COOKIES

1-3 cup shortening (half butter preferred)
1-4 cup sugar
1-2 cup honey (strained) baking honey
1 egg
1 tablespoonful lemon juice
1 1-2 cups flour and 1 1-2 teaspoonfuls baking powder

Method: Cream shortening, add sugar, honey, egg yolk and lemon juice, mix well. Add flour and baking powder which have been sifted together, fold in beaten egg white. Drop on baking sheet and bake in hot oven 10 to 15 minutes. Can be baked in individual tins. A few raisins or a little spice may be added.

HONEY COCOANUT SLAP JACKS

1-2 cup butter
1 cup honey (baking honey)
2 cups brown sugar
1 cup cocoanut (grated)
1-2 cup shell barks or pecans (broken)
1-4 teaspoonful soda
1 pint flour (good measure)

Method: Mix well in order given and drop on tins, bake till brown. About 1 teaspoon will make a nice size slap jack.

HONEY CAKES

1 cup sugar (granulated)
1 cup honey (baking honey)
2 eggs well beaten
1 teaspoonful soda dissolved in 1 tablespoonful vinegar or lemon juice.

Method: Mix well and add about 4 or 4 1-2 cups of flour. Do not make dough too stiff. For best results prepare in the evening and bake next day. Roll out and cut any desired size.

By baking honey I mean a medium or dark honey flavored with a little buckwheat.

Perhaps it would be interesting to note that honey cakes, as well as other cakes, can be more easily removed from baking sheets by using parafine. Warm the tins and rub parafine all over, rub off lightly with cloth or soft paper. Place cut cookies or drop cookies on tins and bake—only repeat parafining where necessary. This method I followed for a number of years and find it quite satisfactory.

On behalf of the Lehigh Valley Beekeepers' Association we extend to you and all interested in the Pennsylvania Beekeeper best wishes for the holiday season.

—Mrs. H. W. Dennis.

The season of 1933 has been very poor with a peculiar honey season. My best producing yards had to be fed while the poor producing yards made a small surplus. The honey I did get was darker and stronger flavored than that of other years. The lack of winter stores in the hives made feeding a necessity. I fed two tons of sugar for winter stores.

Last spring, I purchased one hundred, three pound packages of bees. They were fed and given every opportunity to build up. When the season was over the results obtained from them were compared with those of wintered over colonies. Their production was fair as compared to that of the established colonies.

Last summer we built a new plant for heating, cooling and straining honey. The plant has given satisfaction and I appreciate the results obtained with it. It certainly is nice to bottle clean honey without the usual slow work of sraining.—A. C. Trainer.

LYCOMING COUNTY NOTES

By Harry A. Merrill

The past season was the most discouraging season I have ever experienced. Only about one-third of a crop of honey was harvested. About 25 per cent of the bees had to be fed to carry them through the winter. We anticipated this condition and saved out a considerable number of combs of honey to use as feed instead of purchasing sugar.

This has been one of the best seasons for selling honey in several years. We have had to purchase two lots of clover extracted honey to supply our trade.

The bees are all packed. Some have been packed for about five weeks and have had several good flights since they were packed.

Clover appears to be in excellent condition and promises a good crop for 1934.

At present all there is to do is look after honey customers and go back after the deer I missed on the first day of deer season.

Will try and see you all at the Farm Show in January, 1934.

Wishing you all a Merry Christmas and a Happy and Prosperous New Year.
P. S.—Just leaving for big woods.
(I wish you a Merry Christmas and hope you didn't get buck fever a second time. Ed.)

End of Volume

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